BACK TO THE 19TH CENTURY

Australia under the Carbon Pollution Reduction Scheme (sic) Act 2009

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Foreword by Peter Walsh

The Lavoisier Group

September 2009

Acknowledgements

This publication has been written with the knowledge that the Rudd Government has committed itself to bringing back the CPRS legislation to the Senate in November for recommittal. If the Bill is defeated again, then a trigger for a double dissolution is created, although this fact is diminished in significance because such a trigger already exists.

The view of the Lavoisier Group is that this issue is so momentous in Australian history that an election should indeed be fought over it, and that Australians should have a clear choice to make—Yes or No—to the decarbonisation of Australia.

Currently the major opposition party, the Liberal Party, has yet to make up its mind on this issue. Until the Liberals can resolve to unite behind a "No" position, as they did on the bank nationalisation issue in the 1940s, Australians will not be able to choose, and our democracy will be diminished as a consequence.

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Ray Evans
September 2009

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About the Authors

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He has also addressed network economics issues and in 2007 he published Regulation of Infrastructure co-authored by Warren Pengilley and has written widely on housing including a book, "The Tragedy of Planning". He was educated in the UK and has a PhD from the University of Liverpool and degrees from the University of Salford and the London School of Economics.

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Foreword

Peter Walsh

The end point of the Carbon Pollution Reduction Scheme (CPRS) legislation which was defeated in the Senate on 13 August last is an Australia in the year 2050 in which emissions of carbon dioxide have been reduced to 40 per cent of the emissions of 2000. Currently, our emissions are 16 tonnes per capita. Assuming modest population growth, the 2050 target would allow 6 tonnes per capita, which is twice the current Indian per capita output.

Even if all our coal-burning power stations were replaced by nuclear power, it would be impossible to meet this target and still use diesel-powered tractors and other diesel equipment on our farms. Distillate for road transport, e.g., cartage of wheat, would be very expensive (because of the necessary carbon tax) and so our wheat farmers would have to go back to the use of horses (or perhaps the use of wood-burning steam tractors) as their main source of on-farm locomotive power.

In March 1930, my father, who had grown up and worked on wheat farms in Victoria and South Australia, leased a farm two miles east of Doodlakine, 135 miles east of Perth in the Central Wheatbelt. My elder brother and I grew up on this farm until 1949 when we moved to a larger farm eight miles north of Doodlakine. I can recall my father working with horses in the 1930s and '40s. When my father retired, my brother and I continued to work the farm and, apart from my time in the Senate, I have been a wheat farmer all my life.

The farm had 750 acres (300 hectares) of arable land of which about 300 acres (120 hectares) was cropped each year. It was leased, with farming plant and horses included, for 300 pounds a year. Almost all farms had sheep, my father had about 300.

Soon after my father took on this lease the Great Depression arrived and the price of wheat crashed. The benign landlord, a World War I Veteran named James Fingland, halved the rent for the 1931 and subsequent crop year. Without that concession my father would probably have become insolvent and been forced to abandon farming.

During the 1920s, many farmers replaced horses with tractors which were inadequate for the job. Their design was primitive and prone to serious mechanical failure. Steel wheels, ubiquitous in the twenties, combined with parallel roller bearings—instead of tapered and adjustable roller bearings now in use—often literally fell to pieces. Such mechanical breakdowns delayed planting the crop and were unacceptably costly. Chaff for horses was grown on the farm, whereas kerosene for tractors required cash. A typical farm would require 40 per cent of the farm output to feed the horses.

In many cases the banks, to which most farmers were heavily indebted, put pressure on farmers to go back to muscle-powered horse farming. This boosted the demand for horses and therefore their market price. To my knowledge there is no comprehensive evidence of the size of the price increase, but farmers who lived through this period say a young and fit draught horse would cost 25 to 30 pounds or more. I recall my own father telling me he paid 50 pounds for such a horse around 1934. Fifty pounds was a lot of money in the thirties, half a year's income for workers on the basic wage, but the horses were in time replaced by much improved rubber-tyred tractors. In the 1950s only one farm in the Doodlakine district was dependent on horses.

Until the 1950s most crops were planted on 'fallow' land that had been ploughed in July–August and cultivated another once or twice prior to seeding around May.

In the 1990s there was a rapid movement to 'direct drilling', that is, planting wheat on land which had no prior cultivation, by dropping seeds in a narrow trench dug by 'spike' points which left most of the soil undisturbed. Surprisingly, rainfall is absorbed more readily, and water run-off and erosion vastly reduced—almost eliminated. Weeds are controlled by weedicides instead of cultivation.

In the 1930s and '40s, the average wheat yield around Doodlakine was about 12 bushels per acre or 0.8 tonnes per hectare. Today, average yields have more than doubled to nearly two tonnes per hectare. These yields are not only sustainable, but will be increased and less weedicide will be required unless, of course, technological progress is forbidden by laws of one kind or another, particularly laws to prevent the use of genetically modified varieties of wheat.

With the possible exception of nuclear power, genetic modification is the technology which highlights best the arrogance, ignorance and sanctimony of Green fanatics. Given the propensity of many politicians to appease 'Green' economic sabotage, this is a real problem.

I have given this brief account of one family's farming history to make the simple point that the intent of the CPRS legislation, now due to come back to the Senate in November, is to take wheat-growers back to the life they lived in the 1930s and earlier. Of course, under these conditions they could not sell wheat on world markets and remain viable. They would become subsistence farmers, curiosities like the Amish communities in Pennsylvania, able perhaps from time to time to earn some income by providing tourist venues, or film locations as in the Harrison Ford movie *Witness*.

For Australia's farmers, the weeks leading up to the Senate vote in November will be the most critical weeks in the history of Australian agriculture. I hope every Senator will reflect most carefully on the damage, not only to farming but to every energy-intensive industry, which will follow from the passage of this Bill.

September 2009

The Social and Political Consequences of the CPRS (sic) Act 2009

Ray Evans

In the history of the English-speaking peoples we find some important examples of *salvation politics*, a term we can use to describe the attempts to use political means to change people's lives (and thus the society in which they live), so that their lives are free from sin or, at the least, much less sinful than they have hitherto been.

It is always an attempt to create a heaven on earth, and it flies in the face of Christ's words to those who arrested him in the garden of Gethsemane: 'My Kingdom is not of this world'. And it has always been true that the more draconian the attempt at moral transformation, the more terrible have been the consequences.

The English Civil War was, at least in part, an attempt to purify the religious life of the English. One of the tragic consequences of that fiercely held ambition was the destruction of many magnificent stained glass windows and other valuable religious treasures in the cathedrals and churches of England.

The success of the Temperance Movement in persuading the Americans, by amending the US Constitution, to prohibit the sale, manufacture, and transportation of alcohol for consumption from 1919 to 1933, is another, more recent example of salvation politics. This constitutional amendment brought in Prohibition, also known as The Noble Experiment, which came into effect on 16 January 1920. Repeal came in 1933, but it took the deaths of many people from drinking 'moonshine', the blatant and widespread corruption of police forces throughout America, and the violent gang wars between rival bootleggers to bring about repeal.

Prohibition was, in large part, the result of decades-long campaigning by the Women's Christian Temperance Movement. 'Lips that touch liquor shall never touch mine' was a declaration which lived on for decades after repeal.

Prohibition also gave rise to what is called the 'Baptist-bootlegger' phenomenon. Every successful political movement must have a variant of this. The politicians would meet their bootlegger supporters on Sunday morning and receive the donations which were needed for their campaigning and other necessities, and assure them that whilst they were in office, prohibition would be secure. On Sunday afternoon, after church, the politicians would meet with their Baptist supporters and reassure them that they were rock solid for prohibition. So it was a deal (of which the Baptists were

blissfully ignorant) which worked successfully for 14 years, despite doing enormous damage to the fabric of American life; damage which still lingers in the heirs to the bootlegger gangs which sprang into existence during the thirties.

The Carbon Pollution Reduction Scheme legislation, which the Senate rejected on 13 August and which the Minister for Climate Change, Senator Penny Wong, has promised to bring back after three months have passed, is our contemporary version of Prohibition, and it is the consequence of 20 years of unrelenting campaigning by the Greens and their adherents and supporters in politics, in business and in the media. The opening sentence in Minister Penny Wong's Explanatory Memorandum (**EM**) to the *Carbon Pollution Reduction Scheme Bill 2009*, states

> Climate change is the greatest social, economic, and environmental challenge of our time.

In this formulation the word 'moral' is missing. But it has been used so often by prime ministers, presidents and even archbishops that its absence is merely prudential. This is indeed a moral issue and we are dealing with human sin; sin against the planet.

The CPRS legislation does not require an immediate end to emissions of carbon dioxide. Shutting down our coal-based power stations immediately would at the same time shut down every town and city, and cause unprecedented chaos. So the retreat from sin is to be gradual, but nevertheless inexorable. The CPRS legislation sets in place the machinery for compelling Australians to reach the oft-declared target of a 60 per cent reduction of greenhouse gas emissions by 2050 (from 2000); and to a less onerous commitment of a 5–15 per cent reduction by 2020; or, if a comprehensive global agreement aimed at stabilizing atmospheric concentrations of greenhouse gases at around 450 ppmv or lower is reached, then the commitment will be to reach 25 per cent reduction of 2000 levels by 2020. There is no prospect, whatsoever, of any such agreement being reached, but the clause is there to provide an appropriate pulpit for the Prime Minister's sermons when preaching abroad.

These are the targets prescribed in the **EM**'s opening chapter.

The rationale for this project of salvation, the first paragraph of the **EM**, brings together all of the false claims about alleged global warming that have been made, every global warming catastrophe which has been dreamt of, and lays the burden of guilt for this imminent catastrophe wholly on mankind.

> Scientific evidence confirms that human activities such as burning fossil fuels (coal, oil and natural gas), agriculture and land clearing have increased the concentration of greenhouse gases in the atmosphere. As a consequence the earth's average temperature is rising and weather patterns are changing. This is affecting rainfall patterns, water availability, sea levels, storm activity, droughts and bushfire frequency putting at risk Australian coastal communities, health outcomes, agriculture, tourism, heritage and biodiversity for current and future generations.

The **EM** is a collation of fantasy and deceit, coupled with an ambit claim for political power which is unprecedented in Australian history and which justifies the use of the term 'coup d'état'. The discretion which is vested in the minister is breathtaking. The use of regulation rather than legislation to impose the will of the salvationists upon the people brings back the ancient claim of kings 'The law is in my mouth'. At the heart of the new power structure is The Australian Climate Change Regulatory Authority, shortened prophetically in the **EM** to the Orwellian term 'The Authority'. This body will administer the emissions trading scheme, the reporting regime, and the renewable energy target. It has, for example, the power to issue free permits to coal-based electricity generators, so that they can keep operating. But, on the other hand, the Minister has the power 'to make a determination withholding those permits, in the event that the Authority finds that the provision of assistance under this Part is likely to deliver a "windfall gain" in respect of a particular generation asset'.

So the economic viability of our coal-based power stations, and the value of the shareholders' investments in them, is completely at the discretion of the Minister. 'The law', indeed, 'is in her mouth'.

Further very serious inroads into the rule of law occur in clause 300-1 where the right to silence is abolished, and the right not to incriminate oneself is not allowed. The onus of proof is reversed in clause 336-3 and privacy laws are set aside since The Authority has the right to pass on private information to practically anyone, including the UN and foreign governments (clause 48-1).

A characteristic example of The Authority's power is set out in Para 6.138, which deals with permits issued for reforestation.

> 6.138 The Authority will be able to use a computer programme to determine whether forest stands established and maintained for the purposes of the forest maintenance obligation will achieve an amount of net greenhouse gas removals that is equivalent to the net total number of units that have been issued for the project.
>
> 6.139 The forest maintenance obligation will cease when:
> - The penalty payable under clause 2867 of the bill in respect of the carbon sequestration right holder's failure to comply with the relinquishment notice is paid in full, including any late payment penalty; or
> - the forestry right holder relinquishes the net total number of units issued in respect of the eligible reforestation project; or
> - at the end of 130 years after the first occasion on which an Australian emissions unit was issued in relation to the project.

It has become fashionable for airlines to offer carbon offsets to passengers who wish to reduce their 'carbon footprint' in the form of tree planting opportunities. Perhaps the airlines (and others in this game) should read these words carefully to see if they are engaged in fraud.

The first reaction to this document, and to the legislation which it purports to explain, is one of awe. How many thousands of hours of bureaucratic endeavour have gone into the creation of this huge structure of regulation and control? For how long have the global warming enthusiasts now entrenched within the Department of Climate Change been refining their ambitions? The Secretary of that Department, Martin Parkinson, was Peter Shergold's deputy when the latter was fulfilling Prime Minster Howard's instruction to bring down a report justifying an Emissions Trading Scheme. So this project has been growing within the bureaucratic womb for many years.

As it became clear that what was being planned was going to be extremely harmful to major industries, lobbyists were appointed and consultants engaged to try at least to seek a delay in the execution warrants for those industries which could no longer exist in the new carbon-free world which would come about with this great project of salvation.

The complexity and ministerial-bureaucratic discretion which is intrinsic to this project is the consequence of seeking to achieve something in real life which can only be accomplished in the fantasy world of the economic models of Treasury and Professor Garnaut. Contemporary life is based on the widespread use of cheap electricity, petrol, jet fuel and distillate. Our electricity is predominantly based on burning coal. As soon as our climate prophets impose salvation upon us by imposing new and unpredictable taxes, under whatever label, so that we are forced, through the weight of taxation, to use less and less electricity, and less and less petrol and distillate, with all the growing upheaval and uncertainty which follows, then the political consequences will be immediate and certain. The only way in which salvation can be made secure against slipping back into sin is through the construction of a tight and effective political cartel, which can successfully hold the line against any new political entrants, such as Family First, into the market for votes. This cartel must be strong enough, and wealthy enough, to impose huge economic dislocation, manifest in reduced incomes, higher costs, and growing unemployment, on the Australian people, and still retain power.

This salvation project, then, has been built from the beginning on fantasy and deceit. We have been told by Ross Garnaut and the Treasury modellers and their competitors, at home and abroad, that renewable energy will effortlessly replace coal-based electricity, and at the same time provide green jobs in abundance. The carbon tax on petrol will be compensated for by a concomitant reduction in petrol excise so as to head off a revolt, at least in the short term, from everyone who drives a car.

The political cartel essential to the survival of this project has still not been established. The National Party has declared that it will not join. But the Liberal Party is still deciding whether to join the cartel, or abjure it. If it does join with Labor, then the way lies open for the National Party to displace it as the majority voice of rational politics in Australia.

Recently, a growing number of economists have discovered that the Emissions Trading Scheme, under which tax receipts, euphemistically called 'emission permits' can be

traded, just as taxi-cab licences can be bought and sold, is not the most efficient way of reducing emissions of carbon dioxide when compared with a good old fashioned tax, as in the excise on cigarettes and alcohol. In particular, the opportunities which will be created for 'shorting the market' and creating a 'carbon bubble' will seize the imagination of the traders and speculators in the new 'carbon' market, and cause great uncertainty and volatility in a market which was advertised as providing 'business certainty'. To counter this prospect, the Bill provides the minister with the authority to issue new permits to prick such a bubble whenever she feels the necessity to do so. The problem with all bubbles is how to distinguish them when they arrive. The rising price of emissions permits may be merely the result which the government is striving to achieve.

These 'tax-not-trade' economists are doubtless well meaning, but they have failed to learn the significance of the Baptist-bootlegger story, and they have certainly forgotten the full page advertisement which was taken out by the World Wildlife Fund (WWF) in *The Australian Financial Review* on 2 May 2007, at the time when the Howard Government had lost its nerve and was planning to surrender on this issue. This advertisement took the form of a letter signed by five senior economists from the banking and financial services sector, including ANZ and Macquarie Bank. The key sentence in this letter, which urged the government to adopt an Emissions Trading Scheme, was this:

> The emissions trading scheme … would also have the added advantage—as against for example a carbon tax system—of establishing tradeable property rights with respect to permits, thereby building a support base for maintaining the system going forward within the corporate sector.

The bootleggers were offering their support and declaring their interest in an advertisement authorised by the Baptists! It does not require a crystal ball to predict that the relationships between the financial institutions which will trade these tax certificates, and the regulators who will staff The Authority, will become close indeed. Both parties will need each other.

At the heart of this great project of salvation, then, is the creation of a powerful rent-receiving and rent-seeking alliance of banks and other financial institutions who will make billions from trading the emissions permits and who, once the emissions trading scheme is established, will be able to spend hundred of millions in ensuring, as best they can, that repeal is politically impossible. The money changers sitting at their tables in the temple at Jerusalem (Matthew Ch. 21) could not have dreamed of such rents.

In the TV documentary *The Great Global Warming Swindle*, Nigel Calder, the eminent British science writer and noted global warming sceptic, described how Margaret Thatcher attempted to use the global warming story as a means to get nuclear energy back on to the political agenda in the UK. It was she who financed what is now the Hadley Centre in East Anglia, which has recently announced that it has lost all the

primary data on which its temperature analyses of the last 30 years or more have been based. This announcement has led to conjecture that outside scrutiny of this raw data might have led to a conclusion similar to that regarding the hockey stick—the IPCC logo which turned out to be fraudulent.

Prime Minister Thatcher believed that by backing the anthropogenic-CO_2-causes-global warming-story, she would drive a wedge into the Greens and thus be able to restore nuclear energy as a key part of the British economy.[1] John Howard was also deluded on this score and their joint inability to comprehend what was driving the Greens was characteristic of their inability to understand the most fundamental tenets of Green doctrine. The Greens do not particularly want a carbon-free world. They want a world in which there are much fewer people; they want a world in which those people who are left are subordinate to nature, living very frugal but more equal lives under the guidance of an elect caste of high priests who decide on the doctrinal issues which arise under such a regime. The Greens are an authoritarian sect, with a new religion to establish, and for them nuclear energy is anathema, since it promises energy in abundance for a world with even more people than we have today.

So it was no accident that Ross Garnaut's various reports did not mention the word 'nuclear'. Not once. And this fact is, in itself, enough to condemn him. If you really do believe that emissions of carbon dioxide have to be curtailed, but at the same time you do not wish to see fewer people in the world, living at a much, much lower standard of living, then nuclear power is the answer to your dilemma. France has an electricity supply industry which is 78 per cent nuclear and enables the export of considerable quantities of power to the UK, Spain and Germany.

So nuclear could replace coal. In Australia we would lose a significant cost advantage. Nuclear is probably three times the cost of Australian coal-based power. But it could be done. We could use nuclear power to drive our ships. We could use batteries to power our motor cars. They would not be as efficient or as economic as our current motor cars, but it could be done. There is, however, no substitute for diesel fuel for heavy road vehicles and for the tractors and the heavy equipment on our farms and in our mines. They would have to continue to use liquid fuels or go back to horses and oxen. But all of this calculation concerning the capacity of nuclear energy to provide power for our civilisation is based on the belief that anthropogenic emissions of carbon dioxide are deleterious for the planet; a belief which has no substance to it whatsoever.

Margaret Thatcher's financial support for the global warmers in the UK and her political support for Sir John Houghton, a true believer who became the first chairman of the IPCC, led in the end to the passage of a *Climate Change Bill (Oct 2008)* through the House of Commons, with only four votes against it. This Act mandates

1. To be fair to Margaret Thatcher it should be said that in her 2002 book *Statecraft* she resiled from her earlier position. In the chapter 'Hot Air and Global Warming' she wrote: 'Since no plan to alter climate could be considered on anything but a global scale it provides a marvellous excuse for world-wide, supra-national socialism.'

that the UK's greenhouse gas emissions will be reduced by 80 per cent by 2050. John Howard's attempts to play the same trick in Australia have brought us directly to the CPRS legislation which now threatens the entire political and social fabric of Australia.

As the consequences of decarbonisation begin to become manifest, then the industries which will suffer sooner rather than later will plead for immediate relief. The brown coal power stations of the Latrobe Valley will soon be facing bankruptcy, as some of the loans which have sustained their heavy gearing ratios since privatisation mature next year and have to be renegotiated. No private investor could possibly lend money to an industry facing enforced closure in the short to medium term. So in order to save Melbourne from the consequences of living without electricity, the Commonwealth Government will have to find $6 billion or more to keep these generators solvent and functioning. In bailing out these generators, the Government, of course, is undermining the decarbonisation which is the central purpose of the legislation. And this dilemma will reappear with increasing frequency as the CPRS Act begins to bite.

In the meantime, the directors of these generating companies have another problem to worry about. The Australian Securities and Investments Commission (ASIC) requires directors to sign off on two questions. The first is the solvency of the company. That is straightforward enough. But much less straightforward is the on-going business test. Directors must be satisfied that the company is capable of meeting this test. It will be very difficult for the brown coal generators, facing the very real prospect of bankruptcy next year, to sign off on that matter. So there will be some anxious moments for these hapless directors over the next few months.

Once the brown coal generators of the Latrobe Valley have somehow or other been kept alive, Alcoa's aluminium smelters at Portland and Port Henry will be next on the execution list. Under the current state of opinion which dominates the parliamentary scene in Canberra (a situation which has led veteran columnist Terry McCrann to suggest that our political leaders have been secretly taken over by aliens), it is very difficult to imagine how the Australian aluminium smelting industry can survive. It is beyond argument that shutting down this industry would reduce our emissions of CO_2 substantially. But there is a serious downside to this policy. Every worker in the aluminium smelting industry contributes very substantially to our export income. If these workers are pensioned off, and subsequently fill in their time with subsistence farming, they will add nothing to our export income. And since our national solvency, the value of the Australian dollar, and our capacity to repay the debt which the Rudd Government has put on the slate in recent months are wholly dependent on our capacity to pay our way internationally, such an outcome could have very serious consequences for every Australian.

The cement industry is another CO_2-emitting industry marked down for execution. The loss of production from this industry will have to be replaced with imports. So put another question mark on the Australian dollar. Currently the Government is offering subsidies and special deals of one kind or another to give these industries

time to adjust to 'the new carbon-free economy'. But every time a company says that unless the subsidy or special deal is increased then either relocation offshore will be necessary, or shutting the gates and throwing away the keys will take place, a political crisis will ensue. In that event it will be fortunate for the company concerned to be located in a marginal seat with a Labor member, and if many jobs are at stake, then so much the better for the company seeking relief.

Once governments or their agents become the source of huge financial gain, corruption becomes inevitable. We have just seen Gordon Nuttal, former Queensland Minister for Mines, sentenced to a minimum of two-and-a-half years' jail, for receiving secret commissions. During the 1960s, in the days of Quantitative Restrictions (QRs) on certain classes of imports, the Commonwealth Government was issuing import permits which were very valuable as soon as they were certified by the appointed official. Back in the early 1930s, prior to the establishment of the Tariff Board by the Lyons Government, manufacturers from Melbourne could go to Canberra on the overnight train; see the appropriate minister the next day, and return to Melbourne the next night with a tariff increase, worth a great deal, in their back pockets.

What will be traded, under the supervision of The Authority, are pieces of paper which are tax receipts which decline in value as their owner emits carbon dioxide. How this carbon dioxide is to be measured is a moot question. Given that huge sums of money will hang on the determination of that quantity, and given the very great difficulty (perhaps the impossibility) of reaching any certainty on the measurement, the Government has hit on a nice solution to this problem; a solution, however, which will bring many sleepless nights to the executives and directors of the companies which have to make declarations on this question. The companies themselves have to declare how much carbon dioxide has been emitted by their power stations, refineries, smelters or factories. However, if The Authority suspects that these declarations err on the side of too few emissions, then the directors and executives can be charged; the burden of proof is reversed (that is, the *company officials* have to prove that their emissions really were what they have declared them to be—an impossible task); and if unable to do so they have automatically committed a criminal offence with jail penalties to follow.

In one of his great speeches attacking the abuse of power which characterised the conduct of the officials of the East India Company in Bengal, Edmund Burke said:

> When discretionary power is lodged in the hands of any man, or class of men, experience proves it will always be abused. (House of Commons, 1772)

Under the CPRS Bill we have the ultimate form of discretionary power—the power to send a person to jail because he cannot prove that his company emitted the carbon dioxide which it claims to have emitted.

Corruption does not have to be in the form of the brown paper bags of earlier decades. It can, for example, be the understanding that consultancies will follow an early retire-

ment. It can be in the form of donations (which can take a variety of forms) to the political party in power. There is no end to the ingenuity which can be applied to solving the problem of granting favours but at the same time appearing whiter than snow.

Political life in Australia will become an extremely complicated network of grace-and-favour politics—rather like Barry Jones' knowledge network. But the implications of this are both sinister and economically disastrous.

Two concluding points concerning Australia's place in the world have to be made. The first is protectionism. It is clear from the US experience with its cap-n-trade legislation (the Waxman-Markey Bill), that protectionism goes hand-in-hand with decarbonisation. As energy-intensive industries find themselves having to decide whether to shut down or to relocate overseas, the first cry is for protective tariffs against imports from cheap energy countries. Such tariffs are built into the Waxman-Markey Bill. Thus the **EM'**s exhortation to see the CPRS Bill as a repeat of the winding down of protectionism that took place under the Hawke and Keating Governments is the opposite of the truth. Carbon tariffs will ultimately destroy the WTO, and so the painstaking work over 50 years of building a rules-based international trading system will be for nought. Australia, as a nation whose economy is critically dependant on the existence of such a rules-based system, will suffer greatly.

The second is defence. The Australian economy will suffer greatly if this legislation—in whatever form—is passed. Our capacity to defend ourselves and to play our part in the alliances which have kept us secure ever since the end of WWII, will be very greatly diminished. A nation which embarks on projects of salvation of this literally fantastic kind will find itself treated as a joke by the rising powers around us—China and India in particular.

This legislation is the most dangerous, politically inspired threat to our future that we have experienced since federation. The protectionist and labour market regulation legislation passed by the Deakin and the Reid Governments in the years immediately after federation caused serious economic damage over many decades. But this legislation, if passed, will inflict much worse damage on our economic life, and it will lead to political upheaval and bitterness of the kind we experienced in the conscription referenda of 1916 and 1917. Those politicians who supported this Bill and voted it into law will then be regarded as having betrayed their country.

The IPCC: Often Wrong but Never in Doubt!

Tom Quirk

In the Explanatory Memorandum to the Rudd Government's Carbon Pollution Reduction Scheme Bill, we read the following:

> Scientific evidence confirms that human activities such as burning fossil fuels (coal, oil and natural gas), agriculture and land clearing have increased the concentration of greenhouse gases in the atmosphere. As a consequence the earth's average temperature is rising and weather patterns are changing. This is affecting rainfall patterns, water availability, sea levels, storm activity, droughts and bushfire frequency putting at risk Australian coastal communities, health outcomes, agriculture, tourism, heritage and biodiversity for current and future generations.

This statement carries the imprimatur of Climate Change Minister Penny Wong. It is a formal declaration of the basis for the policy of decarbonisation which is at the heart of the CPRS Bill.

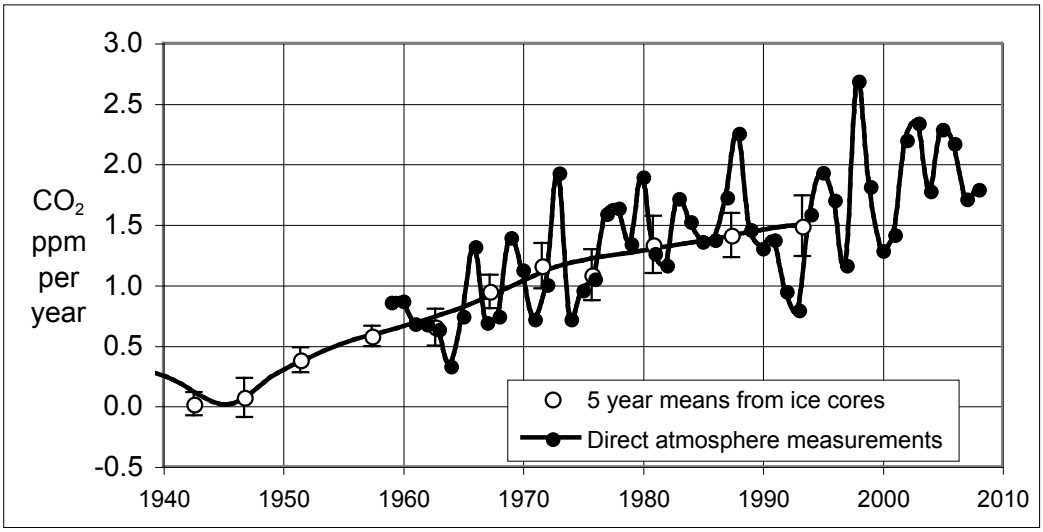
There are two important points that need to be made in any discussion about whether human activities have contributed to the warming of the atmosphere. First, the physics, chemistry and biology used in understanding the behaviour of the atmosphere are well understood at the nuclear, atomic, molecular and bulk levels. Second, when this scientific understanding is bundled together, notably in very large computer models, in order to explain the behaviour of our atmosphere, the certainty of the underlying science gives way to the incontrovertible uncertainty of an infinitely complicated and dynamic system that is never in equilibrium. The only certainty in all the explanations put forward is the uncertainty surrounding them. An uncertainty that is sometimes supported by statistical argument, sometimes merely an expression of opinion, often theoretically impossible to estimate, and often simply ignored.

Measurements

The starting point for this discussion has to be the measurements. After all, it was the measured increase in CO_2 in the atmosphere at Mauna Loa beginning in 1957 that got everyone's attention. Since then billions of dollars have been spent measuring real-time concentrations of CO_2, methane, nitrous oxide and all manner of other trace gases found in the atmosphere. At the same time we have had the past atmosphere measured by taking samples from ice cores in the Antarctic and Greenland. These cores have

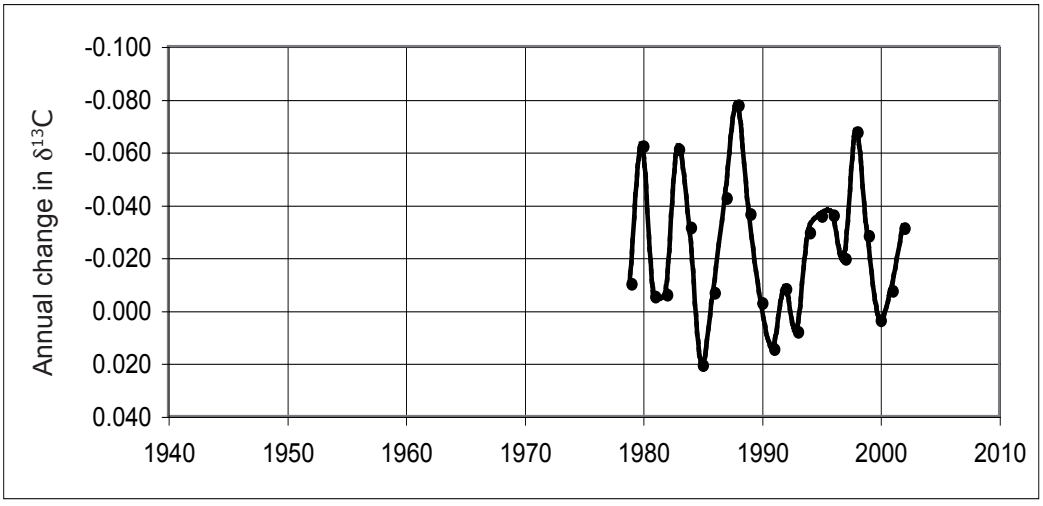
bubbles in the ice which are a record of the atmosphere at about the time that the ice was formed. Note the use of 'about', as timing is an interesting issue when we discuss interpretation. What we have learned is summarized in Figure 2.1 which displays the annual changes in atmospheric CO_2 from 1940 to 2007 and in Figure 2.2 which shows the changes in the isotopic composition of CO_2 for the isotopes Carbon-12 and Carbon-13 reported as $\delta^{13}C$, the ratio of carbon 13 to carbon 12 compared with a standard.[1] This is an indicator of the source of the CO_2. Finally, Figure 2.3 shows the annual changes in methane.

Figure 2.1: Annual changes in atmospheric CO_2



Source: derived from CSIRO Law Dome measurements to 1997 and direct annual atmospheric measurements from Scripps data.

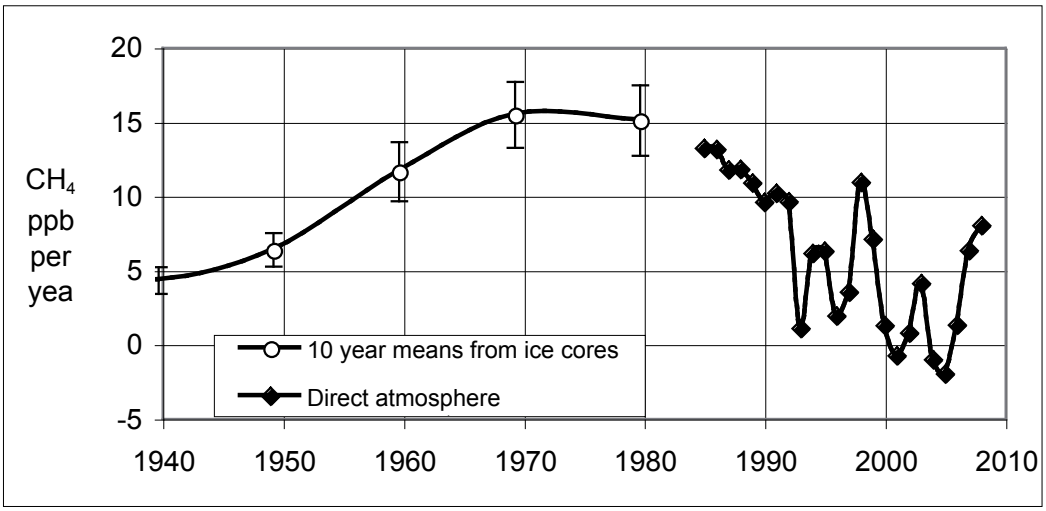
Figure 2.2: Changes in the isotopic composition of CO_2 in the atmosphere



Source: Scripps and CSIRO. Note the inverted vertical scale.

1. $\delta^{13}C$, a measure of the isotope ratio of $^{13}C/^{12}C$ defined as:
   $\delta = 1000 \times ((^{13}C/^{12}C)_{sample} / (^{13}C/^{12}C)_{standard} - 1)$
   The standard ratio is an international standard of comparison and is the zero point for δ .

Figure 2.3: Annual changes in atmospheric methane

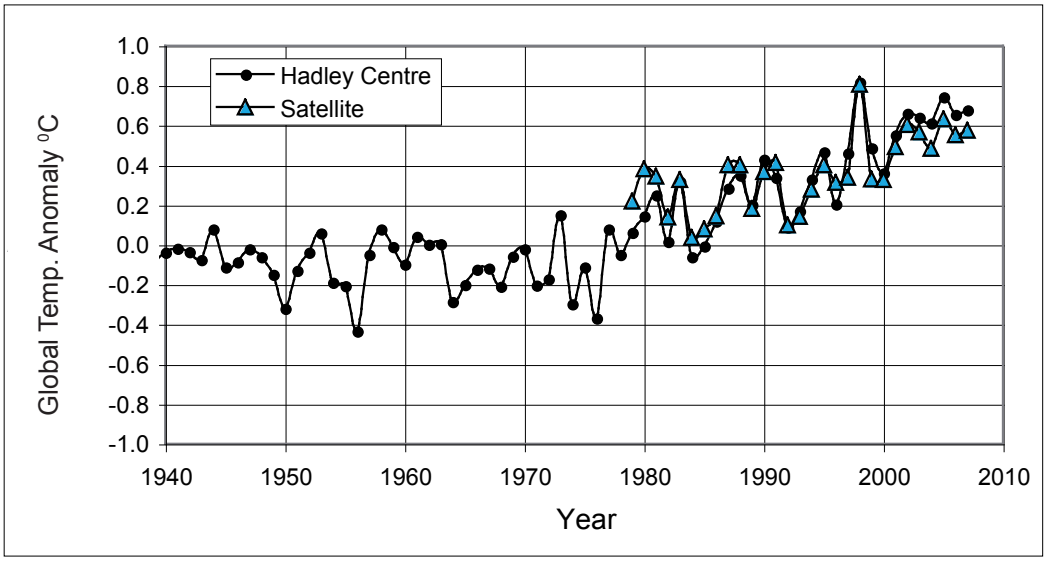


Source: derived from CSIRO Law Dome measurements to 1985 and direct annual atmospheric measurements from NOAA-ESRL data.

It appears as though there were modest increases in CO_2 and methane until 1950 when, suddenly, both gases started to increase more rapidly in their concentrations. The other interesting feature from the real-time measurements is the simultaneous fluctuations in concentrations but with a decline in the rate of increase for methane.

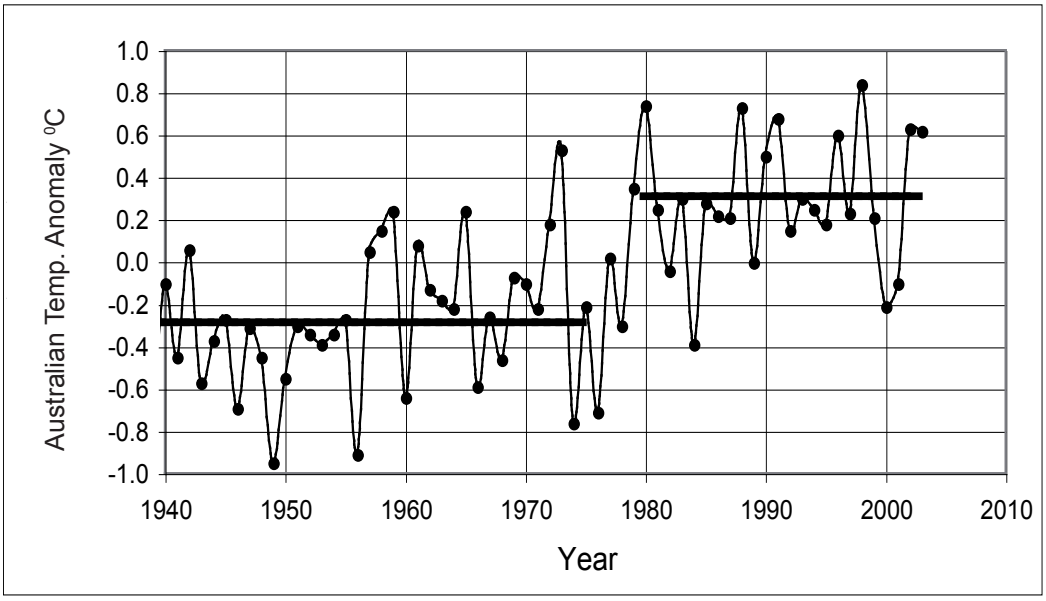
The global temperature, although it is an artificial construct, does convey some of the systematic variations of temperature. There is furious debate over who makes the best job of processing temperature measurements. In fact the agreement between the two data sets is quite remarkable given the difference between measuring a temperature a few metres above the ground and some thousands of metres in the atmosphere. Figure 2.4 shows both ground and satellite results.

Figure 2.4: The global temperature anomaly



Source: derived from ground measurements by the Hadley Centre and mid-troposphere from satellite analysis at the University of Alabama, Huntsville.

Figure 2.5: The Australian temperature anomaly (calculated by the Bureau of Meteorology)



Note: The solid lines are the averages from 1910 to 1975 and 1980 to 2003. The difference between the two periods is 0.6^{0}C.

The main features of the global temperature variations are a rise from 1920 to 1940 (not shown in Figure 2.4), a plateau from 1940 to 1975, a rise from 1975 to 1995 and then a plateau. It should be remembered that complete coverage of the atmosphere only began in the 1970s with satellite data. This provided measurements over the oceans, 70 per cent of the surface of the earth, which had previously had only the most superficial coverage.

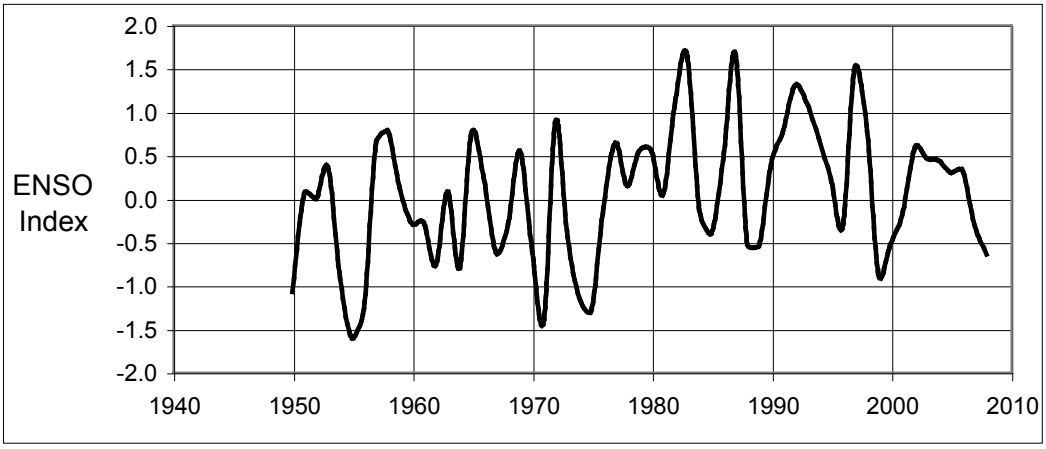
The temperature record becomes more ragged going back into the nineteenth century and measures from earlier times come from proxies, such as tree rings, that are subject to many qualifications and uncertainties.

The Australian temperature record (Figure 2.5) can be most simply described as a constant temperature (albeit with significant perturbations) with a step of 0.6^{0}C between 1975 and 1980; a step that is associated with the Great Pacific Climate Shift. A very important point is the great variability of the Australian temperature compared with the global average. This must in part be a reflection of the inability of a continental land mass to store heat, unlike the oceans where a smoothing of temperature variations takes place.

Finally, there is the behaviour of the oceans. Since the oceans are the major store of energy delivered from the sun, how this energy is distributed by currents within the oceans and how it influences surface temperatures and the behaviour of the atmosphere is of prime concern. Unfortunately the data record is not very good.

The presence of massive current systems, such as the Gulf Stream, has been known and studied for years. However, there are oscillations and variations which appear to be at least partially random that have a substantial effect on the atmosphere. The best known of these are the El Niño–La Niña events. Figure 2.6 shows the El Niño Southern Oscillation (ENSO) index for the last 60 years.

Figure 2.6: Multivariate El Niño Southern Oscillation Index



Source: CDC at NOAA

The variations in this index are replicated in the CO_2, methane and temperature records as well as in the changing isotopic composition of CO_2. This illustrates the dominant role that the oceans play in our climate.

There have been a number of new analyses published and new measurement systems deployed over the last five years. The most interesting and important new results from satellites give a measure of the 'hydrological activity' in the atmosphere (humidity and rain) that is completely at variance with model calculations. Similarly, the use of sophisticated ocean buoys has started to give results for ocean temperatures and energy flow.

Interpretation

It is clear from the measurements that the oceans have the determining influence on global and regional temperature variations. It is even tempting to look at the sudden rise in global temperatures since the mid-1970s and associate that rise with the result of the Great Pacific Climate Shift bringing warmer water to the surface with consequent temperature and CO_2 increases in the atmosphere. (Warm water cannot contain as much CO_2 as cold water).

The Explanatory Memorandum cited above sets out the so-called 'scientific consensus', the phrase used by ministers and their advisers whenever they are challenged on the 'scientific' beliefs which form the basis of their policy. The 'scientific consensus' has been punctured in recent years by the fact that global temperatures have plateaued or cooled slightly since 1998, a period of 11 years, although atmospheric CO_2 concentrations have continued rising.

Various stratagems have been devised to provide an answer to the problem of a cooling world. The most popular has been the use of the phrase 'natural variability'. Cooling, it is suggested, is due to 'natural variability' which has masked the underlying warming

trend. Another tactic has been to suggest that the oceans are warming rather than the atmosphere and this has delayed the atmospheric temperature rise.[2] That strategy has been undermined by measurements which show that ocean temperatures have been falling slightly since 2005.

A great deal of work has been undertaken trying to support the global warming paradigm. But little of this activity has helped remove the many uncertainties. The best example of this is the lack of understanding of the behaviour of methane in the atmosphere. This is even admitted in the appropriate working group of the last IPCC report.

However, there is a level of speculation and research that reaches out from our planet. This ranges from cosmic rays triggering cloud formation, orbital influences in the solar system and solar magnetism, to the long-discussed and much-studied symptom of temperature change, namely, sunspot activity. There may well be a contribution from each of these areas of research and speculation but until the mechanism of action is detailed, and the magnitude of its effect calculated, it is no more than the basis for further research and debate. A very interesting example of this is the correlation of El Niño events with the orbital relationship of the sun, moon and earth. Is it possible to gravitationally pull the Pacific Ocean to trigger an El Niño?

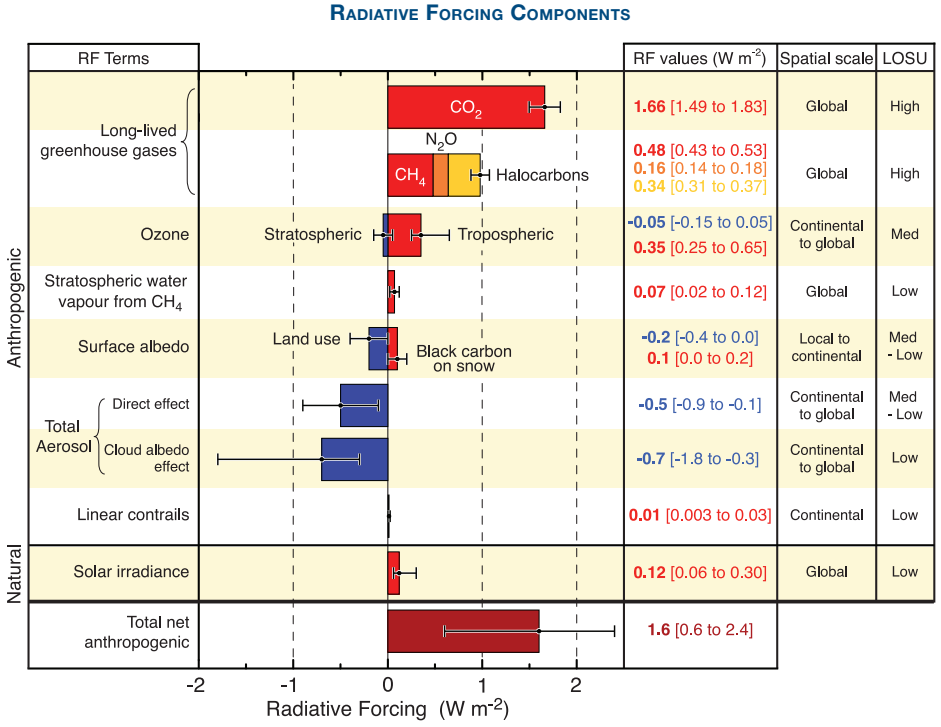
There is a further and quite different level of interpretation where research results are turned upside down to support policy making through propaganda. Perhaps the most egregious example of this is in Al Gore's film *An Inconvenient Truth* where the presentation of temperatures and CO_2 levels obtained from the ice cores is used to suggest that rising global temperatures follow CO_2 increases. The opposite is the case by 800 years or so. As well as that, once we move in geological time from the periods of recovery from the depths of the various ice ages over the last 500,000 years, the ice cores show no correlation of the temperature with CO_2 levels. Climate Change Minister Wong's Explanatory Memorandum is a further example of what at its most charitable could be called anecdotal, but in reality is unverifiable.

Models and Predictions

The central argument used by the IPCC in predicting 'dangerous' increases in temperature is that increasing emissions of greenhouse gases, principally CO_2, have a net warming effect through radiative forcing. This is the extra energy kept within the atmosphere by extra CO_2 that would lead to increasing temperatures. Leaving aside the important question of whether this conclusion is correct scientifically, there is the question of how accurate (or inaccurate) the IPCC may be in its estimates of the extent of such radiative forcing.

2. David Evans, 'The New Trend in Climate Alarmism', 14 July 2009, available on The Lavoisier Group website: www.lavoisier.com.au

Figure 2.7: Climate forcings from various sources



Source: IPCC-AR4 2007 WG1 Fig SPM.2.
Note the large uncertainties for aerosol forcing, exceeding the values of greenhouse gas forcing. Note also that solar forcing is based only on total solar irradiance changes and does not consider the effects of solar wind, solar magnetism, or UV changes.

The IPCC claims that it is 'very likely' that on a business-as-usual basis there will be a 'dangerous' temperature increase by 2100, with a mean rise of 3^0C. In this context 'very likely' is said to mean that it is 90 per cent probable. However, the IPCC estimate (see Figure 2.7) of the mean of radiative forcing from net anthropogenic effects is 1.6 Wm^{-2}. It has a range of uncertainty of 50 to 60 per cent, so it could be as low as 0.6 Wm^{-2} or as high as 2.4 Wm^{-2}. That implies that the estimated temperature increase ranges from 1.1^0C to 4.5^0C, which in turn implies that there is a 30 per cent probability that the increase will be below the alleged 2 degrees increase which is claimed to be the 'tipping point' for run-away temperature increase.

When considering this estimate, it also needs to be recognised that it is the sum of estimates of all the processes of radiative forcing (as listed in Figure 2.7) and not just that of CO_2. Moreover, the IPCC states that these estimates of forcing are based on 'quantitative analysis or an elicitation of expert views'. Importantly, however, no indication is given about the extent of the IPCC's reliance on expert views. There are two processes—surface albedo and aerosols—that have large uncertainties attached to them. The forcing from land use surface albedo has a mean value of -0.2 Wm^{-2} and a range from 0.0 Wm^{-2} to -0.4 Wm^{-2}. This is an uncertainty of plus or minus 100 per cent! The aerosol forcings are also large and they too have large uncertainties.

It is difficult to avoid the conclusion that the lack of precision inherent in the estimating procedure used by the IPCC means that their temperature change estimates

fall far short of the standard required for confidence in decision-making. That we shouldn't depend on the IPCC's estimates for policy-making becomes even clearer once a comparison is made between the modelling of the atmosphere and actual observations. For example, as outlined at the end of the measurement section of this chapter, comparisons of precipitation since 1988 reveal that satellite measurements show increases that are about *three times greater* than those predicted by models used by the IPCC. This suggests that humidity as a control on temperature has, to put it gently, not been properly modelled.

A one-and-a-half standard deviation effect for radiative forcing is not an acceptable level of precision on which to base any definitive conclusion for policy-making.

There is a further issue. The climate forecasting models have been used not only to give future temperature estimates but also estimates of frequency of storms, rainfall and the impact on economic activity. The example of the difference between the Australian and the global temperature record (Figures 2.4 and 2.5) shows how different a continental climate might be from a construct of global temperature that probably most nearly represents the behaviour of the oceans (which, as we noted, cover 70 per cent of the surface of the earth). This indicates that regional forecasting is a useless activity until some predictive ability can be demonstrated.

The lack of knowledge of the behaviour of the oceans, with models not able to predict the onset of El Niños and, more importantly, the longer running decadal ocean oscillations, is only rivalled by the inability of any long-term economic projection to take into account innovation or political change. Yet the uncertainties of the economic models are fed into the uncertainties of the climate models to give predictions of global temperatures ninety years hence!

Conclusions

The importance of the role of the oceans in determining climate changes leads to the first conclusion: that so little is known of the magnitude and timing of ocean events that modelling without this understanding has little, if any, value.

The difference between the land and ocean temperature records leads to a second conclusion that regional forecasts must be even more uncertain than the global forecast and are therefore of no value.

The assessment of the likelihood of temperature change falls way short of the standard required for confidence in decision-making. The large quoted errors in some component elements of the total radiative forcing cast real doubts on any probabilistic measure of the uncertainty.

The dependence of the Garnaut Report on a regional climate forecast for Australia is a major mistake. The statement in the Explanatory Memorandum to the Rudd Government's Carbon Pollution Reduction Scheme Bill is a nonsense.

Australia's Climate Change Policy: A disaster waiting to happen?

Alan Moran

The CPRS legislation rejected by the Senate on 13 August 2009 is based on the belief that anthropogenic emissions of carbon dioxide from the unconstrained use of fossils fuels and of other greenhouse gases such as methane have caused global temperatures to rise during the twentieth century, and that if this continues it could lead to harmful global warming.

The credibility of these issues is addressed elsewhere in this publication. This chapter addresses the economic impact on Australia if the CPRS legislation is eventually passed.

The taxation and regulatory measures proposed in the Bill to force abatement

It is barely conceivable that the world can stabilise anthropogenic CO_2 emissions. To do so would require global CO_2 emission levels at under 3 tonnes per capita. At present, Australia's are over 16 tonnes (and the goal of a 60 per cent reduction by 2050 would still leave Australia with double the arithmetical requirements); those of the US are 20 tonnes (hence the Waxman-Markey goal of an 83 per cent reduction) and the EU 9 tonnes. China is presently at 4.5 tonnes and claims optimistically to contain this at double that level by 2030.

Table 3.1 shows some examples of 2004 levels of per capita emissions.

If Australia closed down its entire coal industry, including the 85 per cent of electricity that is coal-generated, we would still not get close to 3 tonnes per capita. Replacing coal by gas would add 50 per cent to the price of electricity and would still leave us with very high emissions. Replacing coal with wind would not be physically possible and wind is, in any event, three times the cost of coal.

The only two feasible means of getting to the required 80 per cent reduction are first, nuclear, and this presents immense problems politically in terms of replacing existing sources and devising ways (presently inconceivable) of introducing nuclear-fuelled road and air transport; it also requires capital investment with a cost similar to the

entire national income. The second alternative is poverty—India has per capita emissions considerably below the 3 tonnes level but half the population lives without even a light bulb.

Table 3.1: CO_2 emissions per capita, 2004, for selected countries and regions (tonnes)

Selected Countries	CO2 emissions per capita
Angola	0.7
Kuwait	37.1
UAR	34.1
Iran	6.4
Kazakhstan	13.3
India	1.2
China	3.8
Australia	16.2
United States	20.6
Canada	20.0
UK	9.8
France	6.0
Aggregate Areas	
Least developed countries	0.02
Former Soviet bloc	7.9
High-income OECD	13.2
World	4.5

Australia's immediate goal is to reduce emissions by 2020 from 2000 levels by 5 to 25 per cent by introducing a cap and trade carbon tax which is designed to change the behaviour of businesses and consumers. These measures have been accompanied by funding which seeks to drive technical solutions—clean coal funds, green building funds, renewable energy funds and the like. These additional measures for decarbonisation are:

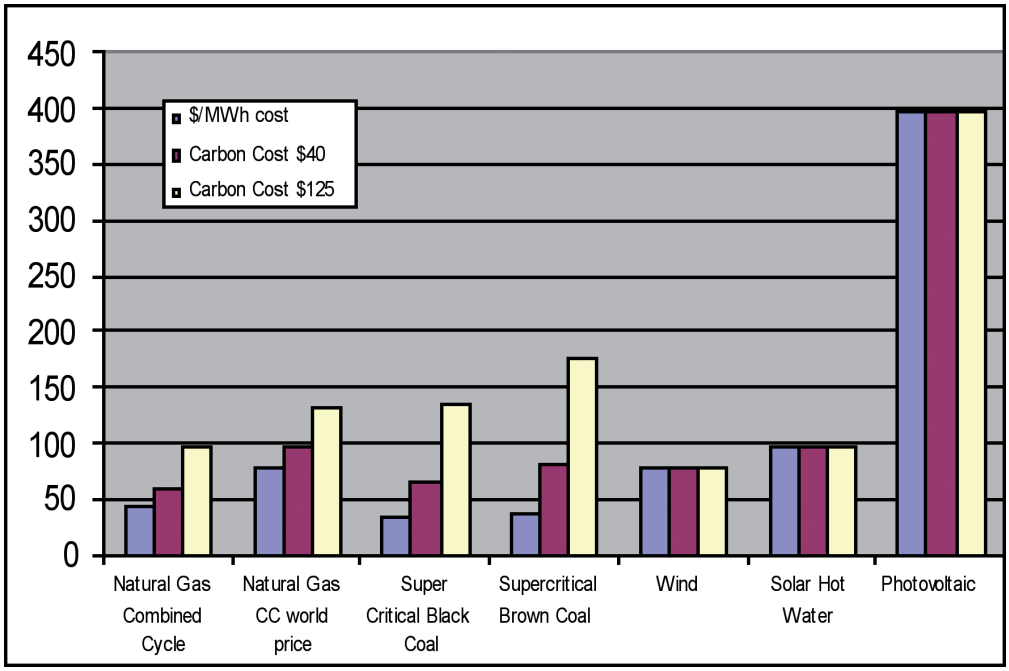
- The Mandatory Renewable Energy Target (MRET), and State schemes which together call for some 10 per cent of electricity to be supplied by sub-economic renewables at an annualised cost of $843 million (based on penalty levels) or $600 million (based on market prices).
- Direct subsidies identified in this year's budget are $518 million for 2009/10, though with state schemes and measures not directly classified as greenhouse-related would be closer to $900 million.
- Regulatory impositions, the most important of which has been the 5 Star measures for housing which account for a tax equivalent of some $1–2 billion.

These measures are the equivalent of a tax on electricity of a little over 10 per cent.

The cap and trade policy, which is central to the Carbon Pollution Reduction Scheme (CPRS) will add massively to these imposts. The CPRS form of carbon tax is designed to greatly reduce emissions of 'greenhouse gases', the most important of which is carbon dioxide. The carbon tax itself is set at levels that will at least double the cost of electricity generated and is supplemented by many other costly measures.

Adding a \$40 per tonne CO_2 tax impost to existing fuel costs in effect brings natural gas-fuelled electricity up from around \$45 per MWh to \$60 if supplies could be assured at the current Australian price. However, the price of natural gas would increase, perhaps double, if demand for natural gas increased greatly, thus forcing a move towards the world price. At that lowish \$40 tax rate, black coal almost doubles in cost and brown coal more than doubles. It is difficult to see the goals being met at the tax suggested and the following chart illustrates costs and relative competitiveness of fuels at higher tax rates.

Chart 3.1 Costs of electricity generation and competitiveness of various fuels at \$0, \$45 and \$125 tax rates (\$ per MWh)



Wind, even though it starts to appear competitive with a tax greater than \$100 per tonne of CO_2, can never provide more than a small share of supply. This is because it is inherently unpredictable, and geographic dispersion does little to reduce the wild swings in the output of wind turbines. Other forms of generation, therefore, have to be in continuous readiness to take up the sudden changes in output that occur. Nuclear costs are probably over \$60 per MWh, though some claim that this could be reduced.

Economic outcomes

Some maintain that the carbon-abating taxes and charges on electricity to households in the CPRS are affordable. This is based on a utopian view that renewable electricity costs only twice as much as electricity from coal. As poles and wire costs account for half of total electricity costs, the arithmetic might suggest that substituting renewable energy for coal means a mere 50 per cent electricity price increase. The proponents of the ETS policy are clearly comfortable with such an imposition on households.

Fanciful though it is to imagine that electricity prices would only increase by 50 per cent, and that this is politically acceptable, the major concern is not the increased price to households.

Far more important is the effect on the competitiveness of the industries using electricity.

The costs on individual firms from the government's carbon tax proposal and its companion legislation requiring that eligible renewables comprise 20 per cent of electricity are considerable.

This is illustrated by estimates that firms themselves have made about the expenditures they will be required to make.

Thus, for example, Caltex has said that it will need to spend between $23 and $40 million per year to purchase carbon credits, an impost that would not be borne by imported fuel. If the firm ceased to produce petrol and diesel in Australian refineries—as it surely would eventually—there would be no effect on world emissions and Australia would have wastefully destroyed a valuable production facility.

Onesteel has said that the CPRS would deliver steelmaking cost imposts that would be unique in the world. The proposal would be likely to bring about a boost in production from other sources, leading to the loss of Australian jobs and outputs but also, as the Australian facilities are highly efficient, to a lower level of industry productivity. Bluescope has said that the ETS would impose a cost on the firm of $500 million by 2020.

Similarly, Alcoa has warned that it would need to shut its two Victorian aluminium smelters. Although these employ fewer than 2,000 people, these are the most productive jobs in Australia. And the low-cost aluminium from the smelters provides major exports as well as the foundation of the competitiveness of many manufacturing plants. Again, the Australian output would be simply replaced, at a great cost of abandoned plant, by new output in areas overseas where there is no carbon tax.

Truenergy has demonstrated how the financial pressures on it as a firm would force it to cease operating by 2015, an outcome which it considers would also apply to the other two main brown coal electricity generators in Victoria: Loy Yang and International Power. This would eliminate 90 per cent of the State's electricity capacity. The

generators argue that, relative to the US and EU, the proposed Australian scheme is heavily biased against incumbent generators. EU and US schemes initially provide most generators their existing emissions. The US plans freely allocate 35 per cent of emissions to generators compared with 4 per cent under Australia's proposal.

Forcefully substituting costly green energy for commercially produced energy increases business costs. This means lower wages and lost jobs, which can, at best, only be replaced by less well paid jobs to compensate for the increased energy costs.

Kevin Rudd has 'pledged' to create 50,000 new green jobs through the CPRS. This won't happen. The Victorian Government said that its own VRET subsidies would create new jobs in manufacturing windmills—but none emerged. Spain, with the world's most heavily subsidised green economy, has lost 2.2 real jobs for every artificially created green job. Spain now has the highest unemployment in the Western world.

The companion piece of legislation to the ETS tax is the Renewable Energy Bill. It proposes subsidies and cost impositions to force 20 per cent of electricity to be derived from renewable sources. This is based on the 1997 MRET scheme. Though the original MRET scheme was never a good idea, unlike in 1997 it can no longer be credibly argued that, given time, wind-generated electricity will be competitive with conventional fossil fuels.

Based on the price premium required for wind, the least uncompetitive available renewable source, and the Bill's penalty costs on electricity retailers, the renewable energy supplied would be double the cost of that from commercial sources. On average, this would raise generation costs by 10 per cent and impose a deadweight loss on the economy of $1.8 billion per year. This would be in addition to the $13–24 billion-plus raised through the cap and trade tax.

As part of a greenhouse abatement package that includes the ETS, the Renewable Energy Bill damages our energy competitiveness while offering no net reduction in emissions. With the ETS, the 20 per cent renewable requirement would merely change the composition of aggregate emission reductions and do so in a more costly way. It would weaken the market-based simplicity which is intrinsic in an ETS scheme and which allows targets to be met at least cost.

Unlike the case with mandatory renewables, the ETS tax has its revenues directed back to firms or individuals. But with the mandatory renewable requirements all we have is a tax on commercially supplied electricity with the revenues directed back to the suppliers of intrinsically uncompetitive energy sources. This marks a return to the protectionist era when tariffs on imported goods fed directly into the profits of manufacturers in the protected sector.

Mandatory renewables are promoted by an archetypical combination of 'Baptists and bootleggers'. Many of the Baptists worship at the Church of Al Gore. The bootleggers offer support and funding to promote their commercial interests. They include a wide range of interests, including those set to obtain commercial advantage from

wind farms and other high-cost renewables, those promoting trading in permits and a great many in the public sector or dependent on public funding to pursue scientific, administrative or academic careers.

Where, as is the case with the components of the CPRS, firms are confident that they can obtain favours from government in terms of taxpayer-provided subsidies or cost impositions on their competitors, this tends to undermine the commercial processes that are centred on seeking out and meeting the needs of customers at lowest cost. Management time is diverted from its primary function. When manufacturing industry depended on tariff protection, Australia found that it gradually became hopelessly uncompetitive—government decisions dominated profit prospects and firms quite rationally devoted a great deal of their energies into lobbying for government support that is available only at the expense of the consumer or taxpayer.

It has become clear that, like manufacturing facilities previously made possible by restraining import competition, wind farm subsidies are not incubators for an infant industry that will mature into genuine world competitive and productive activities. Moreover, in making a poor use of our resources, they are sapping the nation's competitiveness on a much greater scale than was the case with manufacturing industry tariffs, because of the all-pervasive nature of electricity within the economy. Like renewable energy providers, gas producers too, though having a fuel that is competitive in its own right, are rapidly shifting their focus on lobbying for a carbon impost to enhance their competitiveness against coal.

Among developed economies, Australia is, perhaps, the most vulnerable to action on carbon emissions. Following reform and partial privatisation from the early 1990s, the electricity supply industry has seen a triumphal reversal of its previously moribund, overstaffed and badly managed legacy. The domestic electricity and gas industries have become among the lowest cost suppliers of energy in the world. The electricity supply is based on cheaply generated, abundant and low-cost coal and is efficiently delivered to industry and homes.

The carbon tax will destroy this low-cost supply that has become the backbone of the competitiveness of key industries in Australia, as well as conferring considerable direct benefits on households.

An ETS would not only stifle current business operations but would virtually eliminate new investment in energy-intensive processing and manufacturing industry. Leakage of current energy-intensive industry overseas is certain, despite the allowances to energy-intensive industries planned to be in place with reducing benefits for some 10 years.

Australia will suffer other detrimental effects from a carbon tax. An ETS, if implemented globally, as it must be if it is to be meaningful, would require the elimination of coal as a source of energy, unless, miraculously, a cheap means of carbon capture and storage were to be discovered. Aside from fuelling our cheap electricity, coal

provides a quarter of Australia's exports. Australia has some 76 billion tonnes of coal reserves (8 per cent of the world's total) and even if this coal is worth as little as $10 per tonne, eliminating its value means Australia would incur a loss of some $760 billion of wealth—comparable to a year's national income. Compounding this lock-in of the valuable coal reserves, Australia also has considerable reserves of gas and shale oil which would also eventually need to be priced out of production, resulting in further losses of national wealth.

The uncertainty of economic modelling predictions

Much of the cover allowing politicians to support the Australian proposals rests with benign outcomes from economic modelling of their effects by Treasury and others. While these models are based on empirical observation, the uncertainties of their projections going decades into the future are seldom raised.

The models themselves rest on demand and supply responses estimated as a result of known relationships between different products. But information on the relationships that are central to modelling forecasts is based on quite narrow ranges of observations, and the relationships can also change markedly over time, as we have seen as a result of IT innovations.

Many relationships within the operational parameters of these models are likely to be stable. We can be pretty certain, for example, of the elasticity of demand for, say, coal and the implications throughout the economy where the price rises by 10 per cent. We would see some shift to other energy sources which have costs below the 10 per cent price increase; we would see some reduction in the end products using coal as a result of higher costs. And we would see some expansion in demand for products that use less coal and less energy, since these will have become relatively cheaper. All these changes would offset somewhat the initial loss caused by the increased cost.

We also have experience of considerable changes in energy supply and the associated price increases. During the 1970s the price of crude oil quadrupled over a short period of time. This caused major economic dislocation and the worst recession since World War II. However, adjustments were made relatively easily because ways were found to economise on oil. These included substitutions by coal and natural gas and, for those nations not spooked by green witchcraft, nuclear power. The higher prices also stimulated increased oil supplies.

In the present modelling situation, such secondary effects would be confined to an expansion of nuclear power, currently representing 16 per cent of world electricity supplies, since this is the only feasible replacement for carbon-based fuels.

At issue is whether the situation being modelled is comparable to what we would face in estimating the effects of a tax designed to eliminate a product within a class of goods or that designed to eliminate the entire class. This can be visualised best with

respect to the food sector. We could, for example, be quite confident of assessing the effects of a tax that drove out the use of oranges. People would choose alternative goods; there would be some loss of welfare, perhaps measurable in terms of gross national income. But there would be little major change.

Substitute for that measure a tax designed to eliminate consumption of all known foods. Clearly there would be mass starvation, and considerable loss of income, though new foods might be developed to allow continued human existence.

The question about a carbon tax designed to stabilise global CO_2 emissions that required countries such as the US and Australia to reduce their emissions by 80 per cent is whether the better analogy is like the tax on oranges or a tax on the whole class of foods.

Present-day energy consumption is almost wholly dependent on carboniferous fuels. Energy itself is, second to food, the basic building block of all human activities. The only substitute we have for carbon-based energy is nuclear energy. With the carbon tax we have only the flimsiest of experience on which to model the effects. Unlike the case with oil in the 1970s, the substitutes do not exist, except in the case of nuclear, and to enable that to replace carboniferous fuels requires great ingenuity—especially in finding ways to replace oil for motor vehicles, ships and aircraft.

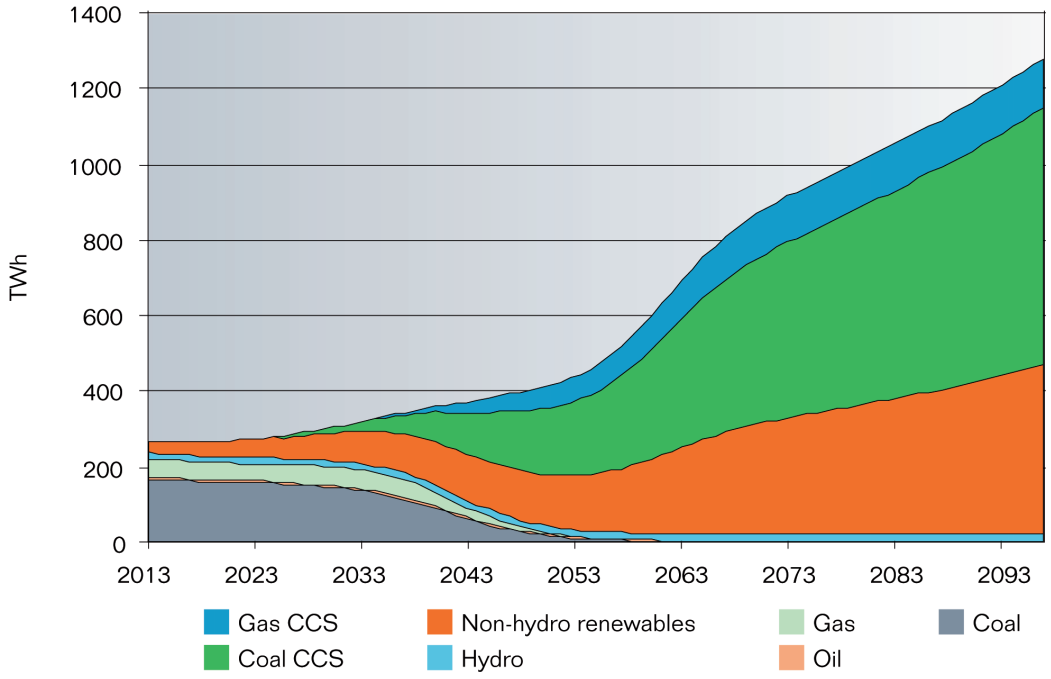
In addition to such considerations, the modelling assumes a steady state movement from one pattern of the economy to another—it assumes that we simply move from coal to gas to some as-yet-undiscovered renewable, carbon capture, or nuclear. Such a movement is unlikely to occur without, at the very least, considerable transitory turmoil.

Importantly, Treasury and other modelling, in addressing a frictionless move to alternative energy sources, is driven by assumptions about new technologies yet to be devised. The modelled outcomes even envisage coal production merely facing a slowdown. This is because of assumptions about Carbon Capture and Storage, assumptions which would see the technology costing only around $40 per MWh. Though double the present cost of producing electricity, the recent closure of the Shell-bankrolled Monash research facility into this technology illustrates that hard-nosed firms—even those with a green tinge—can see no prospects of achieving the target at such a price. In fact the possibility of doing so at any price less than $150 per tonne is highly questionable.

Because of these sorts of uncertainties, long-term economic modelling is termed 'storylines and scenarios' by the IPCC. This recognises that the vast changes (policy shocks) are not susceptible to the normal standards of modelling rigour. New technologies are assumed to develop without any evidence that this is possible. Without that, the costs of forcing emission reductions would be driven to astronomical levels and would bring a rapid reduction in living standards.

Figure 3.1 reproduces one scenario which Treasury envisages from the taxation regime recommended. By around 2050, 80 per cent of electricity is modelled as coming from exotic renewables and from gas and coal incorporating carbon capture and storage (CCS).

Figure 3.1: Australia's electricity generation technology shares, 550 scenario with zero leakage carbon capture and storage



Source: Garnaut Climate Change Review (Final), Ch. 20 page 486, Figure 20.9.

Recent events associated with the global financial meltdown illustrate some of the fragilities of economic modelling, even for a short term ahead. These are magnified out of all proportion when we are discussing forecasts 40 years hence. And yet the results of models forty years into the future are eagerly devoured and accepted as evidence that the outcomes of a serious tax shock on a basic commodity will be benign.

The difficulties in estimating the range of measures are further illustrated by the previous forecasts of economists. Not long ago, modellers put the tax on carbon dioxide at around $10 per tonne to enable the decarbonisation of economies. Taxes of over $40 are now discussed and the range of measures Australia presently has in order to achieve even a 4 per cent penetration of exotic renewables into the electricity market is greater than this at $37 per MWh ($50 after tax). This equates to a similar price per tonne of CO_2 and, according to the Renewable Energy Bill, would need to rise to $93 per tonne to achieve a 20 per cent renewable share.

Currently we have a battle of model-based solutions. Among these are the Frontier model, McKibbin's and Geoff Carmody's GST approach. While the policy implications of some of these may offer more hope to some sectors than others, they all are based on similar data sets.

Some assume higher elasticities which would suggest a greater shift to lower carbon energy for a given price. Some envisage a lower cost through higher purchases of credits from overseas, a measure that is analogous to the activities of rich men like Prince Charles and Al Gore whose carbon footprints are many times those of the average person and who contribute funds ostensibly to compensate those in poor countries to remain poor (and in Al Gore's case purchasing the credits through his own carbon credits sales firm). Such measures are like rich people conscripted into the army paying someone else to replace them.

Different models estimate or assume different elasticity responses to carbon price increases. This is highlighted by the claim of Frontier's Danny Price that the Treasury model overstates the switch in demand to less carbon-intensive outputs by a factor of 10. He argues that the tax effect is threefold that estimated by Treasury because of a failure to count second-round effects on industries using carbon energy inputs.

The models have different approaches to allocating the flows of revenues. That of Frontier, like Waxman Markey, funnels more funds back to industry than the government's ETS, and is understandably favoured by some firms that are less disadvantaged. While Carmody's tax approach offers some advantages, it downplays the possibilities of placing a carbon tax on imports to level the playing field. How, for example, do we decide the CO_2 emissions used to create a box of Belgian chocolates?

Treasury is dismissive of Australian modelling other than its own, which it claims to have been subjected to the most comprehensive peer review process. Perhaps so. But one does not need to endorse the Frontier modelling to recognise that it illustrates the vast uncertainties that underlie the apparent conviction which officials and ministers display when addressing the economics of this issue.

Risks to the world trading system

For the world as a whole to achieve the emission reductions being called for, not only must the developed economies reduce their emission levels, but emission restraint mechanisms place considerable impediments on the catch-up growth of the developing countries. One approach is to force developing country participation through penalties for non-participation. The Garnaut Report cites, with apparent approval, the suggestion of the economist Joseph Stiglitz that a tariff be placed on goods for recalcitrant countries which are not playing the game. Garnaut also notes that the head of the WTO, Pascal Lamy supports such penalties as a 'distant second best solution'.[1] The suggestion has been met with understandably fierce responses from developing countries. The Prime Minister, Kevin Rudd, has recently raised the spectre of penalty duties being placed on Australian goods 'by other economies which join

1. *Garnaut Draft Climate Change Review*, http://www.garnautreport.org.au/draft.htm p.324, July 2008. Border tariffs on carbon intensive products from countries that fail to take action comparable to the US also feature in the Waxman-Markey Bill.

the cap-and-trade system of the future'. This has become a point of issue within the EU (with the French apparently advocating it and the Germans adamantly opposed).

While measures such as WTO tariffs on the carbon contents of goods may be a background threat to be used to encourage a 'voluntary' solution, should this not emerge, as previously mentioned, devising and applying countervailing duty measures would prove extremely difficult, even if the attempt to do so did not unravel the world trading system as we presently know it.

Concluding comments

The task for Australia, embodied in the CPRS legislation, to reduce its emissions, with its coal-based electricity supply system, popular and political sentiment adamantly opposed to nuclear power, and an energy-intensive industry structure, seems to be simply impossible.

The failure of the Bill to pass the Senate on 13 August focused attention on the renewable side of the CPRS. The Senate has agreed to requiring electricity supply to comprise 20 per cent 'renewable energy'. Some politicians are sufficiently ignorant of basic economics to consider such measures to have positive effects, in many cases because they consider we are running out of resources, notwithstanding Australia's 1,000-years-plus supply of coal. Others may be supportive to avoid being labelled as pro-pollution, conscious of the vociferous lobby of wind farm investors and their advisers who are keen to obtain the subsidies without which the exotic renewables could not be profitable.

The passage of the Renewable Energy Bill through the Senate means another step towards the transformation of Australia's competitive electricity supply industry into one which will be internationally less competitive.

The work of German economist Richard Tol has highlighted the fact that there are major savings to be achieved by delaying taking action. Tol estimates that deferring cuts until later in the century would, for the same quantity of emission reductions, reduce costs to little more than 10 per cent of those entailed with an early start.

Similar sorts of outcomes emerge from the Treasury modelling. From Treasury's model it is possible to infer the costs of doing nothing to 2020 and then catching up with the 2050 target thereafter should the need and achievability of such action prove necessary. That cost according to the Treasury model is 0.3 per cent of GDP by 2050. Even if this is not overstated, 0.3 per cent of GDP seems a reasonable insurance policy price to pay rather than imminently embarking on measures that will be, in the White Paper's words, 'the most significant structural reform of the economy since the 1980s'. By 2020 we will be clearer on the need, if any, for emission reduction policies and we will, presumably, have access to all the technological advances that Treasury claims will be forthcoming.

There may be a risk from severe anthropogenic induced climate change. But there is also a more certain risk of severe economic consequences in seeking to address such change.

The Lavoisier Group Inc

The Lavoisier Group is named after the founder of modern chemistry, Antoine-Laurent Lavoisier, who discovered oxygen, identified carbon dioxide as the product of combustion of carbon in air, and who laid down the theoretical basis of modern chemistry. He was also an ingenious experimenter and instrument-maker who insisted on the highest possible accuracy when taking measurements. He was executed by the French Revolutionary Government in 1794.

The Lavoisier Group was incorporated in April 2000. At that time, the founders were concerned that the Australian Government might ratify the Kyoto Protocol without proper understanding of the scientific claims on which it was based, or of the economic implications of the decarbonisation regime which ratification would have required.

During the federal election campaign of 2007, ALP leader Kevin Rudd campaigned strongly on the need to manage 'climate change' and after winning the election on November 26, he went, as Prime Minister, to Bali to ratify the Kyoto Protocol. Since assuming office, he and 'Climate Change' Minister Penny Wong have vigorously pursued their ambition to introduce a decarbonisation policy based on an Emissions Trading Scheme, a plan almost identical to that promised by former Prime Minister John Howard before losing office.

In December 2009, yet another international conference to design a successor treaty to the Kyoto Protocol in order achieve world-wide decarbonisation will be held in Copenhagen. This conference seems to be heading for the same rocks which have shipwrecked every other attempt at global decarbonisation: the refusal by the developing world, particularly India and China, to abandon their plans to lift many hundreds of millions of their peoples out of abject poverty. Central to this ambition is the provision of electricity, and coal is the only source of energy which can realistically be used to generate this electricity.

It will be difficult to paper over this divide and it will be difficult for those political leaders who have insisted on a world-wide plan to now require their own countries to go-it-alone.

The Lavoisier Group provides a network and a Website which enables Australians who are concerned about this issue to keep abreast of developments here and overseas. Those who sympathise with our aims, and wish to join, can apply for membership through the Website: www.lavoisier.com.au

The Lavoisier Group's Board comprises President The Hon. Peter Walsh AO; Vice-President Ian Webber AO; Treasurer Harold Clough AO; Bruce Kean AM; Bob Foster; Tom Bostock; George Fox AM; David Archibald; Peter Chew; and Secretary Ray Evans.

‘Emissions regulation offers government an irresistible opportunity to centralize and control every aspect of our lives; on our roads, on our travels, in our workplaces, on our farms, in our forests and our mines, and, more threateningly, in our homes, constructed as they will be compelled to be, of very specific materials and of prescribed sizes. It is not difficult to foresee a diktat as to how many lights we may turn on and when we must turn them off: the great curfew. The new regime has the capacity to make the wartime National Security Regulations look like a timid exercise of government restraint.’

The Hon Ian Callinan AC QC
Justice of the High Court 1998–2007

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