



White Paper

March 2011

Energy Law, Climate Change Law and Policies

Abstract

This whitepaper covers the law for energy and climate change. Energy law deals with electricity and gas law under the National Electricity Law and the National Gas Law. Climate change law deals with the National Greenhouse and Energy Reporting Act 2007 and the Renewable Energy (Electricity) Act 2000 with other environmental schemes and programs of the State Government.

The energy sector is a major contributor to greenhouse gases through generating electricity using coal and natural gas and supply gas for industry and household consumption. As climate change policies and law impact the energy sector there will be significant issues and problems for investment in the sector and major behavioural changes to the generation, transmission, distribution and the retail sale of electricity. Similar impacts will occur for natural gas.

The linking of energy law and climate change law is essential for better appreciation of the impact that these two issues have on each other. The focus so far of climate change law is connected with the generation of electricity.

The law for climate change mitigation has stalled. However, the debate on climate change is continuing with the release of Update Papers by the Garnaut Climate Change Review.

Introduction

Energy law is evolving to include laws protecting the interests of consumers and small business who are seen to be disadvantaged in negotiations with energy suppliers and retailers. The focus of discussion on energy law in today's session is the new National Energy Customer Framework within the context of the National Electricity Law and the National Gas Law.

Climate change law development has slowed. However, debate on climate change policy is continuing. A major focus of the debate is the electricity sector using carbon based fuels, mainly coal, to operate power stations to generate electricity. This debate is examined in the context of the consumer of electricity and energy more broadly. More specifically, the climate change policy debate is examined to assess the information available to consumers and the public more broadly and the economic and legal impacts of the policy debate on them.

Climate change and energy

The generation of electricity relies on brown and black coal and gas. *Australia's emissions projections 2010*¹ says:

"The stationary energy sector is the largest emissions sector. In 2009 it represented 51 per cent of Australia's total greenhouse gas emissions and at 295 Mt CO₂-e, emissions were 51 per cent above 1990 emissions of 195 Mt CO₂-e.

The stationary energy sector includes emissions from electricity generation and the direct combustion of fuels (fuels consumed directly in the manufacturing, mining, construction and commercial sectors and other sources such as domestic heating and cooking)."

Australia's emissions projections 2010 states the intention to put in place a carbon price for abatement measures to meet the Kyoto Protocol target by 2020:

"The Australian Government has reiterated its intention to introduce a carbon price in Australia to reduce emissions and meet its 2020 targets. These projections assume current levels of global policy action on climate change Consistent with the domestic policy assumptions, they do not include additional global action, such as the Copenhagen Accord pledges. The projections will be updated as domestic and international climate change policies evolve."

Australia's emissions projections 2010 recognises the influence of economic and climate factors that affect the National Greenhouse Gas Inventory (NGGI):

"Recent trends in the NGGI show that Australia's total emissions have been relatively stable from 2007 to 2010, with many sectors experiencing low levels of growth due to the impact of the global financial crisis on industrial production and the demand for electricity. In addition, drought conditions over the same period have caused a decline in emissions from the agriculture sector.

In the June quarter of 2010, Australia experienced reduced trend emissions growth as a result of changes in the fuel mix of electricity generation including a surge in hydroelectricity generation in the National Electricity Market (NEM) (an increase of 33 per cent on the previous quarter) reflecting recent good rainfall. Marked decreases also occurred in electricity generation from black and brown coal, resulting in the lowest quarterly levels of coal-based electricity generation in the NEM since 2003. Even though hydroelectricity is back to full capacity, emissions are forecast to increase through the projection period. This is the result of the expected recovery in industrial production and increase in electricity demand in line with GDP growth."

Looking at projection estimates, *Australia's emissions projections 2010* says:

"Australia remains on track to meet its Kyoto Protocol target of limiting emissions to 108 per cent of 1990 levels. Australia's emissions are projected to average 582 Mt CO₂-e per year over 2008–12, which is 106 per cent of 1990 levels.

Australia's total emissions are expected to grow by 34 Mt CO₂-e between 1990 and the Kyoto period 2008–12. The major source of growth over this period is the energy sector, driven by Australia's relatively high rates of economic growth and international demand for Australia's resources. The electricity subsector dominates the growth in emissions over this period and is projected to increase by 73 Mt CO₂-e, or 57 per cent. Direct combustion of fuels and the transport sector also contribute to growth over the period."

¹ Department of Climate Change and Energy Efficiency, at <http://www.climatechange.gov.au/~media/publications/projections/australias-emissions-projections-2010.pdf>.

The growth of emissions in the electricity sector will slow due to a number of factors identified in *Australia's emissions projections 2010*:

"emissions from electricity generation are projected to grow by 6 per cent between 2010 and 2020, much slower than historical rates (15 per cent between 2000 and 2010). Both the Renewable Energy Target and energy efficiency measures are forecast to contribute to slower demand growth and lower emissions intensity of electricity generation over this period. "

The climate change policy debate

Leadership in the climate change policy debate is missing. In its absence the policy debate is at times confusing although attempts are being made to rectify a more balanced approach to discussing the real issues of climate change and mechanisms to deal with it. This is demonstrated by the work being done by Professor Garnaut who is releasing the final update report, *Transforming the electricity sector*, in Melbourne today. This is the last of the update reports following the final report made in 2008 by the Garnaut Climate Change Review.

The debate spurred on by Professor Garnaut is interesting to analyse as it conveys a number of issues that bring into focus the economics of a decision to take action to deal with climate change issues. This analysis of the Garnaut debate is discussed in this paper.

The policy debate has slowed due to the uncertainties experienced by the Australian public and reflected at the political level. People will not support a massive change to their living standards without clear and understandable information and convincing arguments. The current debate about a carbon tax shows this concern. The climate change debate needs to be activated to better understand the issues and the course of actions needed to transform the lives of the Australian community into a future of efficient energy with minimal damage to the environment.

Absence of leadership

The debate is being poorly handled by political leaders and those responsible for policy administration. The current situation can be compared with the debate leading to the Carbon Pollution Reduction Scheme draft legislation. However, even this debate suffered from political leadership. The current political debate is more concerned about "bringing it on" for a political stoush rather than seek to better inform the wider community on the issues and possible mechanisms to deal with them. Also, the lack of political leadership can be seen in the rapid switching between policy alternatives for dealing with climate change issues. The switch to a carbon tax and away from a market approach to climate change is a massive policy change that is not supported with analysis in economic terms. The effects of a carbon tax on the Australian economy are significantly different in economic terms than a market based system.

The Commonwealth Government appointed a Multi-Party Climate Change Committee in February and it has issued a document, *Carbon Price Mechanism*², which states:

"This document contains a proposed carbon price mechanism that has been discussed by members of the Multi-Party Climate Change Committee (MPCCC). The proposal has been agreed by the Government and Greens members of the Committee. Mr Windsor and Mr Oakeshott have agreed that the proposal be released to enable consideration by the community and to demonstrate the progress that has been made.

The MPCCC has discussed a number of different ways in which a carbon price could be introduced into the economy and the advantages and disadvantages of each. This paper outlines the result of that discussion."

This work is helpful but it lacks the essential information about the impact of a carbon price on the Australian community. The document recognises that introducing "a carbon price will affect Australian households and communities. Assistance should be provided to those households and communities most needing help to adjust to a carbon price, while striving to maintain incentives to change behaviour and reduce pollution." This vague statement does not assist the community understand the impact of this course of action. Uncertainty prevails.

IPCC reports as basis of the science

A further issue in the debate is the information on climate change issues. It is based on the work of the Intergovernmental Panel on Climate Change (IPCC)³, a leading international body assessing climate change. The

² This document can be viewed at <http://www.climatechange.gov.au/government/initiatives/~/media/publications/mpccc/mpccc-carbon-price-mechanism.pdf>.

³ The IPCC website at <http://www.ipcc.ch/> gives this information about the body:

"The Intergovernmental Panel on Climate Change (IPCC) is the leading international body for the assessment of climate change. It was established by the United Nations Environment Programme (UNEP) and the World Meteorological Organization

problem with the reports issued by IPCC is their content. They are scientific papers that received peer review without translation into non-scientific language. The intention of the reports is to inform policy makers and not necessarily the general public. This is clearly stated by IPCC in its website:

“Because of its scientific and intergovernmental nature, the IPCC embodies a unique opportunity to provide rigorous and balanced scientific information to decision makers. By endorsing the IPCC reports, governments acknowledge the authority of their scientific content. The work of the organization is therefore policy-relevant and yet policy-neutral, never policy-prescriptive.”

The policy prescription is a matter for the governments of each country. Unfortunately, this policy prescription in Australia has not been debated publicly and often non-scientists advocate strongly the argument that the science is clear and exact without treading carefully as scientists tend to do when advocating the results of their research. By bringing the scientific studies and reports together there is the chance that a body of scientific opinion can be relied upon as “mainstream” science on the topic of climate change.

Local verses international actions

A further issue that needs resolving is the link between Australia’s emissions of carbon based gases (greenhouse gases⁴) comprising Carbon dioxide (CO₂), Methane (CH₄), Nitrous oxide (N₂O), Hydrofluorocarbons (HFCs), Perfluorocarbons (PFCs), Sulphur hexafluoride (SF₆), and the rest of the world. The concept of an international approach to resolving climate change issues was damaged at the United Nations Framework Convention on Climate Change Conference of the Parties (COP) held in Copenhagen Denmark during December 2009. The December 2010 COP held in Cancun, Mexico, continues the concept of a vision rather than a plan for action⁵:

“1. *Affirms* that climate change is one of the greatest challenges of our time and that all Parties share a vision for long-term cooperative action in order to achieve the objective of the Convention under its Article 2, including through the achievement of a global goal, on the basis of equity and in accordance with common but differentiated responsibilities and respective capabilities; this vision is to guide the policies and actions of all Parties, while taking into full consideration the different circumstances of Parties in accordance with the principles and provisions of the Convention; the vision addresses mitigation, adaptation, finance, technology development and transfer, and capacity-building in a balanced, integrated and comprehensive manner to enhance and achieve the full, effective and sustained implementation of the Convention, now, up to and beyond 2012”.

The closest outcome to an action is:

“37. *Urges* developed country Parties to increase the ambition of their economy-wide emission reduction targets, with a view to reducing their aggregate anthropogenic emissions of carbon dioxide and other greenhouse gases not controlled by the Montreal Protocol to a level consistent with the Fourth Assessment Report of the Intergovernmental Panel on Climate Change”.

The problems with the international situation are described in economics as the prisoner’s dilemma. The *Garnaut Climate Change Review*, 2008, describes this in context as “each country benefits from a national point of view if it does less of the mitigation itself, and others do more.”

These unsettled arrangements due to the prisoner’s dilemma and consequences of the international approach to climate change mitigation add greater concern for the community in comprehending the issues for an intelligent debate. This is highlighted in the Garnaut Climate Change Review Update Paper No 6: *Carbon pricing and reducing Australia’s emissions*⁶:

(WMO) to provide the world with a clear scientific view on the current state of knowledge in climate change and its potential environmental and socio-economic impacts. The UN General Assembly endorsed the action by WMO and UNEP in jointly establishing the IPCC.

The IPCC is a scientific body. It reviews and assesses the most recent scientific, technical and socio-economic information produced worldwide relevant to the understanding of climate change. It does not conduct any research nor does it monitor climate related data or parameters.

Thousands of scientists from all over the world contribute to the work of the IPCC on a voluntary basis. Review is an essential part of the IPCC process, to ensure an objective and complete assessment of current information. IPCC aims to reflect a range of views and expertise.”

⁴ These gases are those listed in the Kyoto Protocol to the United Nations Framework Convention on Climate Change, Annex A, located at <http://unfccc.int/resource/docs/convkp/kpeng.pdf>.

⁵ The decisions adopted by COP can be viewed at <http://unfccc.int/resource/docs/2010/cop16/eng/07a01.pdf#page=2>.

⁶ View at <http://www.garnautreview.org.au/update-2011/update-papers/up6-carbon-pricing-and-reducing-australias-emissions.pdf>.

"The 'messy world' of climate change policy into which the world has passed after Copenhagen and Cancun establishes difficult circumstances for our country. It is difficult first of all because, while there are now many elements of a strong international agreement on mitigation (see Update Paper two *Progress towards effective global action on climate change*), they are not yet adding up to effective action to constrain climate change to an extent that would serve Australia's national interest. They are difficult because they do not yet contain elements that are conducive to trade in emissions entitlements that would reduce the costs of Australia meeting what will be seen as our proportionate commitments to reductions in emissions. They are difficult because the absence of trade in entitlements, and the convergence of carbon prices with which it would be associated, will encourage unprincipled interventions in international trade that over time are likely systematically to discriminate against Australia as a large exporter of emissions-intensive products."

Professor Garnaut and the climate change debate

The Garnaut Climate Change Review released its report in 2008 presenting the economic perspective of climate change.

The Garnaut Climate Change Review has been releasing a series of update reports on the issues of climate change since the release of the final report⁷, *Garnaut Climate Change Review*. The last of the update papers, *Transforming the electricity sector*, being released today in Melbourne should provide useful information for the energy sector. This update paper is described at the website⁸:

"The paper looks at the drivers of recent electricity price rises and describes the likely additional impact of a carbon price. In response to this, the paper will establish how households can be assisted in the transition. It also examines how the regulation and development of the electricity grid can promote a more efficient transformation of the sector. Finally, it considers the case for assistance to electricity generators and proposes an appropriate package of transitional measures."

Professor Garnaut says that climate change policy is back on the agenda because "there is great community interest in this issue than in any other public policy issues"⁹. Reflecting on the Australian climate change discussion, Professor Garnaut says that in his experience the climate change debate is greater than the debate on trade liberalisation of the 1980s and early 1990s and other economic structural reforms.

An interesting answer was given by Professor Garnaut at the Launch of Update Paper 6: Carbon Pricing & Reducing Australia's Emissions, National Press Club, 17 March 2011¹⁰, to a question that relates the current approach to climate change mitigation and the former economic reforms for trade liberalism. The question and answer are extracted in full:

"ALEX HART; Professor Garnaut, Alex Hart from the Seven Network. In 2009 you described the Rudd Government's emission trading scheme model as one of the worst examples of policy making you have ever seen. Given the difficulties faced by the Prime Minister currently, obviously the citizen's assembly promise, the broken carbon tax promise, trying to appease the Greens and Independents, opposition from the Opposition and perhaps some public scepticism, are you worried that history is going to repeat itself?

ROSS GARNAUT; I wasn't talking particularly about the Rudd Government's approach. I was talking about Australia's consideration of that policy issue. There are a number of unsatisfactory features of that. One of the most worrying for me and I have the advantage of - disadvantage of having grown up as an economist in the old days of Australian protection when we killed our productivity growth -we made ourselves the worst performing developed country in the world through our all round protection - was that we seem to be getting back into a world where favours were negotiated by individual businesses where there weren't disciplines on the policy process.

The end point of that is not just some small resource allocation difference from one industry being a bit smaller or a bit bigger. The end approach of that is you undermine the integrity of the whole policy making process. We demonstrated in Australia how important that is when we got rid of that high protection. We got rid of that protectionist political culture.

When we did that, we went through a period when after eight decades of having, with New Zealand, the worst performing economy in the world in terms of productivity growth for developed countries, we became for a

⁷ The final report can be viewed at <http://www.garnautreview.org.au/2008-review.html>.

⁸ View at <http://www.garnautreview.org.au/update-2011/events-speeches.html>.

⁹ Lecture of the Garnaut Climate Change Review- Update 2011 at the BMW Edge, Federation Square, Melbourne 3 February 2011 view at <http://www.garnautreview.org.au/update-2011/events-speeches/reflections-australian-climate-change-discussion-transcript.pdf>.

¹⁰ View transcript at <http://www.garnautreview.org.au/update-2011/events-speeches/carbon-pricing-reducing-australias-emissions-transcript.pdf>.

while the very top performer in the nineties. We stayed there for a while. Now we've had a bit of a battle again in the last ten years. It was that descent back into the protectionist political culture that I most had in mind when I described the policy making process as being the worst in living memory."

The update papers provide another launch of the climate change debate. They cover the issues¹¹:

- decision-making framework
- international mitigation progress
- global emissions trend
- biosequestration and the land sector, including reducing emissions through new approaches to management in agriculture and forestry
- climate change science
- reducing Australia's emissions, pricing carbon and assisting people affected by new policies
- role of innovation in reducing emissions
- transformation of the Australian electricity sector.

The final update report on the 2008 report will be released in May 2011.

Looking at the costs and benefits of mitigating climate change, the Garnaut Review raises the question: Would the substantial costs of climate change mitigation exceed the benefits? The response given in Update Paper 1¹² is:

"A contribution towards the answer to this question was made through the Review's cooperation with the Australian Treasury on modelling the costs of mitigation, in addition to the Review's own modelling of benefits.

The benefits of mitigation are the avoided impacts of climate change on the community, businesses and the broader economy.

While some of the costs of mitigation come through conventional economic channels, such as reduced economic output as a result of introducing a carbon price, and are amenable to economic modelling, many of the benefits are not so easily measured. The benefits can be difficult to observe and some only accrue far into the future. The Review developed a framework to ensure that all benefits (and costs) were considered and explicitly accounted for in an assessment of costs and benefits."

This uncertainty in the economic analysis of climate change mitigation needs clarification and further analysis. The Update Paper repeats a figure used in the Final Report (Figure 1.4 from *Garnaut Climate Change Review* [2008, p16]) see Annexures. This figure assists in understanding the relationships between the costs and benefits of mitigating climate change. It shows:

"The costs of mitigation accrue early and the benefits of avoided climate change come later. The utility curve without climate change mitigation is above the utility curve with mitigation in the early years. In the early years, the benefits of no action exceed those of action. After the point in time at which the curves cross over and the orange line is below the blue line, the benefits of action exceed the costs of action.

The two curves in this instance form the shape of a fish. The body of the fish covers years in which the net current benefits of mitigation are negative. The area of the body of the fish represents the excess costs of mitigation in the years to the crossover point. The tail of the fish covers years in which the net benefits of mitigation are positive. The tail of the fish grows in depth and breadth and total area with time.

The big question for policy is whether the area of the body of the fish exceeds that of the tail of the fish."

The figure gives no clear timeframe for the distribution of costs and benefits of mitigation. It can reasonably be assumed that the timeframe is long and probably beyond the twenty-first century¹³.

The Update Paper identifies further factors affecting the costs and benefits of mitigation:

¹¹ Update Paper No 1, *Weighing the costs and benefits of climate change action*, <http://www.garnautreview.org.au/update-2011/update-papers/up1-weighing-costs-benefits-climate-change-action.pdf>.

¹² View at <http://www.garnautreview.org.au/update-2011/update-papers/up1-weighing-costs-benefits-climate-change-action.pdf>.

¹³ This is based on the analysis summary given in Update Paper No 1 for modeling of the economic welfare using market benefits of mitigation by Australia and the rest of the world at pages 5 and 6.

- scientific knowledge that has developed over the period since the Review suggests that many climate change impacts are likely to be more serious than the IPCC and other scientific sources used by the Review suggested three years ago. The avoidance of these costs would therefore offer greater benefits than projected in 2008. This has the effect of lowering the utility function under the ‘without mitigation’ scenario, as seen in Figure 2 below. The body of the fish becomes thinner and shorter and the tail of the fish wider and longer.
- progress towards a comprehensive global agreement—the time at which there would be opportunities to reduce costs of mitigation in Australia and in the world as a whole through large-scale international trade in emissions entitlements—has been slower than was embodied in the 2008 modelling. This suggests that the costs of any specified degree of mitigation are likely to be greater. This in turn shifts out the point at which the benefits start to outweigh the costs. In Figure 2, the mitigation curve shifts to the right. The fish’s body grows fatter and longer and the fish’s tail shorter and thinner.
- it seems that the costs of new low-emissions technologies have declined more quickly than was embodied in the modelling of the costs of mitigation. This is noticeable, for example, in China and the United States – which are likely to be influential in determining costs of low-emissions technologies in other countries as well. In these and other countries, innovation seems to have been accelerated partly as a result of governments’ expansionary expenditures in response to the Great Crash of 2008.

Update on the science

The question about the level of understanding in the Australian community is looked at by Professor Garnaut in Public lecture: Launch of Update Paper 5 – The Science of Climate Change on 10 March 2011¹⁴:

“There is increasing discussion in the legitimate scientific literature of the possibility that large damage will occur at smaller increases in global average temperatures than two degrees. While the science has strengthened it would seem that public confidence in the science has weakened in Australia and some other countries. That’s paradoxical but it is part of the current reality - one of the things that makes climate change policy difficult.

The actual evidence from the science is stronger but there’s certainly no stronger public belief in that.”

The question raised by this observation is how to raise the level of understanding about the science of climate change. Professor Garnaut provides an answer:

“In order to understand the mechanisms and implications of climate change, an interested non-scientist must draw on the publications of experts in the field. The review’s acceptance in 2008 on the balance of probabilities of the overwhelming majority of opinion in the Australian and international science communities has not been challenged by developments in the genuine science over the past three years.

The most - and I’ve shown you a few of them but we could go through more. The most important and straightforward of the quantifiably - quantitatively testable propositions from the mainstream science have been confirmed, was shown to be understated by the passing of time.

In addition, some important parameters have been subject to better testing as measurement techniques have improved and numbers of observations increased. And they too have tended to confirm the propositions from the mainstream science.

Some of the propositions for the mainstream science that have been confirmed by improved evidence, better techniques.”

This suggests a complex range of issues that would better the understanding by the community on the matter of climate change and the measures that should be used to deal with it. The quantity and quality of the science is critical to supporting the confidence of the community. Professor Garnaut provides further comment on the quality of the science as tested in recent times:

“Now the politicisation of the science, as many countries have moved towards stronger action to reduce greenhouse gas emissions, has placed institutions conducting the science under great scrutiny. Exhaustive reviews have revealed some weaknesses in execution of the scientific mandate but none that are material to the reliability of the main propositions of the mainstream science.

The consistency of the understatements since climate change became a large policy issue in the early 1990s is a cause for concern. It will be much more of a surprise if the next large assessment of the IPCC led to a downward, rather than upward revision of expectations of damage from unmitigated climate change.”

¹⁴ View transcript at <http://www.garnautreview.org.au/update-2011/events-speeches/science-climate-change-transcript.pdf>.

The politicisation of the science seems to place the scientific work into the broader community where the science is being debated. The economics of climate change policy depends at large on the science, As observed by Professor Garnaut the broader science on climate change appears to be settling while the science of the detail is being debated:

“There is still a high degree of uncertainty about myriad important details of the impact of increased concentrations of greenhouse gases. The uncertainty in the science is generally associated with the rate and magnitude rather than the direction of the science’s conclusions.”

The direction of science’s conclusions is critical for the economic debate. Professor Garnaut points to improvements to the quality of the science that lends support to better understanding in the community and the government about the economic choices and implications:

“Some of the propositions for the mainstream science that have been confirmed by improved evidence, better techniques, include the warming of the troposphere and the cooling of the stratosphere and the long-term shift towards wet extremes and hot extremes coexisting. And I’ve cited papers that throw light on these issues that at three years ago were there in the theoretical literature but which couldn’t be confirmed there and now, peer reviewed publications that give confirmatory evidence.

The science’s forecast of greater frequency of some extreme events and greater intensity of a wider range of extreme events is looking uncomfortably robust.”

Confirmation of the science at this time is critical for economic policy. Professor Garnaut summarises the connection between the science and its economic impact:

“In a highly contested and complex scientific matter with immense implications for public policy, for the allocation of resources and the distribution of incomes it is important to base policy on the established propositions of the science.”

Implications for economic policy development

The unfortunate situation for policy makers is that the science is the only real source of evidence upon which economic policy can be based. This is unfortunate as in many other areas of economic reform requiring structural change there are a range of sources that can be referenced to test the propositions proposed for economic policy change. In the case of climate change the direction of the evidence is the science. It is critical therefore that the science is well established to provide the confidence the community demands for a significant redirection of their economic behaviour brought about by major economic policies. The economic change needed can be compared with the experience of trade liberalisation of the 1980s and early 1990s and other economic structural reforms.

Despite the improving science and techniques to measure the impact of carbon based gases on the atmosphere, there remains doubt in the Australian community. The debate is considering economic choices and the best means to tackle the adverse consequences of climate change.

Professor Garnaut refers to the uncertainty in the science that relates with the “rate and magnitude” of the science rather than its conclusions about climate change. The question here is whether the “rate and magnitude” of the science is of significance in the statistical, economic analysis to challenge the “direction of the science’s conclusions.”

Professor Garnaut looks at the issue of uncertainty and its economic impact and then seeks to identify the sources of uncertainty in the community that impact confidence in the science and ultimately the economic choices needed for policy change¹⁵:

“There is no question that the presence of uncertainty complicates policy responses. As the Royal Society said in a statement about uncertainty in climate science - and I quote from that Royal Society document - like many important decisions policy choices about climate change have to be made in the absence of perfect knowledge. Even if the remaining uncertainties were substantially resolved, the wide variety of interests, cultures and beliefs in society would make consensus about such choices difficult to achieve. However, the potential impacts of climate change are sufficiently serious that important decisions will need to be made. That’s the end of the quote.

The new scientific evidence has tended towards confirmation of the central points of the old understanding about climate sensitivity, that a doubling of concentrations would raise temperatures by about three degrees. Here the uncertainty has become more narrow, but still covers a range that matters a great deal to human society. There is little doubt - and here I’m continuing on uncertainties - that a warmer climate will mean higher

¹⁵ See transcript at <http://www.garnautreview.org.au/update-2011/events-speeches/science-climate-change-transcript.pdf>.

rainfall on average around the earth. However, changes in wind patterns and other aspects of the wider climate system will make some regions drier and there is uncertainty about the boundaries of these regions.

This is of immense practical significance for Australia.”

The economic policy based on scientific evidence must be convincing. It would assist the Australian community to have economic information on the costs of mitigation on the Australian economy and in particular sectors such as the electricity sector. In particular, the impact of mitigation will be experienced initially in the electricity sector with flow on costs to business and households reflected in the pricing mechanism. Consequently, prices need to reflect a free market for electricity. All intervention in the electricity sector must be removed to avoid distortions in the price for electricity. This means removing completely all subsidy and cross-subsidy mechanisms and the privatisation of electricity assets. Also, reforms are needed in the National Electricity Law and the National Gas Law and related laws in all jurisdictions.

A major policy proposal change to implement a carbon tax

It is being advocated that a carbon price will come from a carbon tax. This is not correct. In fact, a carbon tax will cause many carbon prices to emerge. A tax is imposed as a blunt economic policy instrument applying usually one or a low number of tax rates on the intended taxpayer. It is likely that to be effective the tax will be imposed on producers as an input cost of production rather than as an end tax such as the goods and services tax that is based on consumption. The tax would be similar to the former sales taxes that prevailed until the introduction of the goods and services tax. This form of tax produces economic inefficiencies and distortions that are borne by the whole economy and not just the polluting producers. These are what economists call dead-weight losses. This feeds into the pricing system for each producer and depending on their cost profile a price for carbon will become part of the price for the goods and services. The exact amount of the price attributable to the carbon tax will be unknown. Some outputs of a producer would be inputs for another producer hence compounding the impact of the carbon tax on the pricing system.

A carbon tax will produce inefficient outcomes for the Australian economy and ultimately consumers.

A further issue is these questions:

Who are the targets of the carbon tax?

Who are the polluters?

How will consumers using goods and services incorporating greenhouse gases be separated from the definition of “polluter” to avoid paying the tax?

Taxation is seen to be a negative impost and taxpayers expend resources trying to avoid or evade the tax. Will this occur with a carbon tax?

Answers to these questions need to be carefully handled by policy makers and the drafter of the legislation imposing the tax.

Pricing carbon emissions through the market

By contrast a market mechanism would deliver a cleaner price for carbon. This conversation is shown in the Garnaut Climate Change Review Update Paper No 6: *Carbon pricing and reducing Australia's emissions*¹⁶. The discussion in this Update Paper balances a market approach against a regulated approach. The discussion is interesting and shows the arguments supporting a market approach:

“emissions that reflects the costs that they impose on the rest of society—the global carbon prices that will reduce emissions to the extent required. The other is by regulation, through which firms and individuals are required by law to refrain from emissions-intensive activity to an extent that adds up to the required reduction in emissions.

The former, market-based approach imposes on individuals and firms a price that reflects the external costs of carbon emissions, so that they take them into account in their private decisions on what to consume and to produce. It causes consumption of every item to be discouraged if its production embodies a relatively high degree of carbon emissions and to be encouraged if it embodies emissions in relatively low degree. It causes production of every item to be discouraged if it is relatively emissions-intensive and encouraged if it embodies relatively low amounts of emissions for the value of the product.

¹⁶ View at <http://www.garnautreview.org.au/update-2011/update-papers/up6-carbon-pricing-and-reducing-australias-emissions.pdf>.

The latter, regulatory approach requires interventions by Government to influence every consumption and production decision by individuals and firms, based ideally on careful calculations of the activities that can reduce emissions at the least social costs. To do this well, Government has to calculate a cost of carbon emissions, and introduce regulations that cause businesses and individuals to act as if they were subject to a carbon price: to constrain consumption of some goods and services and therefore to encourage consumption of others, and to encourage production of some goods and services and therefore to discourage the production of others.

The market-based relative to the regulatory approach requires many fewer decisions by Government and much less intrusion into private decisions. On information in relation to the reduction of emissions, the market approach requires one of two things. With an emissions trading system, there must be an assessment of the total amount of emissions that can be placed into the atmosphere over a period of time, and the issue of permits to emit up to this total amount. Trade in permits then determines the appropriate carbon price. With a carbon tax, a price is set for a permit to emit that is expected to achieve the same reduction of emissions. The market-based approach requires all of the information that determined the recommendations on the targets for reducing emissions and the price of carbon in the Review.

The regulatory approach requires all of the information required by the market-based approach. It also requires a lot of information about individuals' and firms' responses to intervention by Government and on the welfare costs of those interventions.

There was for a while in the twentieth century a great contest of ideas, about whether market-based or regulatory approaches to managing the economy were more conducive to economic welfare. The regulatory approach went under the name of "central planning". The case for regulation depended on assessments of high transactions costs and instability in the market economy, on the capacity of Government to take a wide range of decisions more reliably than individual economic actors, and on the capacity of Governments to secure intended outcomes when they intervene directly to replace private by official decisions.

That contest of ideas was won decisively by the market economy. It was not won in theory. It was won by observing the results of predominantly market-based decisions and predominantly regulatory interventions. The outcome of the contest of ideas allows a significant place for interventions of some kinds, where this is clearly the most effective way of correcting for specific market imperfections. But it has left a presumption in favour of market-based decisions unless there is clear evidence that regulation would give better results in a particular case."

The regulatory approach referred to in this extract is not a carbon tax but other direct measures of government intervention such as the *National Greenhouse and Energy Reporting Act 2007* and the *Renewable Energy (Electricity) Act 2000*.

The Update Paper recognises that a market system will produce huge revenues for government. The Update Paper makes this comment:

"In addition, placing a price on carbon in the manner recommended in this paper will generate a large amount of revenue. The revenue can provide the means to cut distorting taxes that reduce economic welfare.

The carbon price operating through markets leads to changes in decisions that have economic costs in the old calculus that took no account of the costs of climate change. But it is actually a less distorting and less economically costly form of taxation than many of the other ways in which Australian governments raise revenue. A judicious use of the revenue raised by pricing carbon can increase economic welfare to the extent that it is used to reduce highly distorting taxes.

The revenue from carbon pricing can also provide the public resources for encouraging a socially desirable level of innovation in low-emissions technologies. This will reduce the cost of reducing emissions. By using the carbon pricing revenue to switch away from taxes that are more distorting (even in a world of no climate change) than a tax on carbon and to fund innovation and so to assist businesses in making the transition to the world of carbon pricing we can substantially offset the costs of climate change mitigation on Australian economic welfare".

The change in policy direction to a carbon tax appears to be adding confusion in the minds of people about climate change. This can be seen in a question put to Professor Garnaut at the Launch of Update Paper 6: Carbon Pricing & Reducing Australia's Emissions, National Press Club, 17 March 2011¹⁷. The full extract of the question and answer is given:

¹⁷ View transcript at <http://www.garnautreview.org.au/update-2011/events-speeches/carbon-pricing-reducing-australias-emissions-transcript.pdf>.

“PHIL HUDSON; Professor Garnaut, Phil Hudson from the *Herald Sun*. There’s a lot of confusion about this in the community. I guess as you point out, the different sides of politics have different arguments on this, but what’s your message directly for the individual households who they say that they recycle at home, they try and curb their water use, they try and be as energy efficient as they can but then they hear all the debate going on about this, they see that they’re going to be hit with a carbon tax and then have the money given back to them as a tax cut?

Do you understand why people think this is a confusing money-go-round and what is your one message to them about why you think they need to do this?

ROSS GARNAUT; Overall, low and middle income earners in Australia will be better off directly, as a result of these arrangements, and in addition future generations of their family will be protected from dangerous climate change.”

This is a safe answer to the question. However, the question is more interesting, reflecting the mood of the Australian community.

When will the Australian community accept action for climate change?

The translation of the relative certainty about the science on climate change to economic policy will remain challenging. Consequently, it is critical for government and policy planners to ensure community support for their approach to climate change as identified by the science.

As the community becomes better informed about the science of climate change and accepts the economic consequences of making real reforms that will disrupt their living standards and income, an economic policy will become clearer. The Australian community need to be convinced that the government is taking leadership and delivers useful information about climate change science and policies for mitigation. The benefits to the community need to be greater than the losses to be borne in the transition to a cleaner environmental outcome with cleaner energy.

The debate should be more advanced by now. For reasons stated by Professor Garnaut in his answer to Alex Hart from the Seven Network at the Launch of Update Paper 6: Carbon Pricing & Reducing Australia’s Emissions, National Press Club, 17 March 2011 (extracted earlier) the debate has slowed. The debate needs to be advanced to debate the policy alternatives for mitigation. In the event that a market approach to price carbon emissions is too cumbersome and costly to implement and operate then direct subsidies should be considered, targeting the worst polluters. This approach is rejected by some in the community as rewarding the polluters at the expense of taxpayers. This is correct but it may provide an avenue to speed up the move to low pollution production that benefits the economy as a whole. Rewarding the “bad” people is not a new concept and where it has been implemented, the results have allowed the community to move on and deal with the fundamental differences and problems. An example of the approach is the South African Truth and Reconciliation Commission¹⁸.

The concept under this model is not necessarily perfect for immediate use in dealing with polluters in the climate change policy debate but it can provide useful approaches for dealing with the problem. In “The South African Truth and Reconciliation Commission: A suitable model to enhance the role and rights of the victims of gross violations of human rights?” Sam Garkawe makes this point in criticism of a full amnesty:

“However, one major problem with truth commissions is that they are perceived, particularly by many international human rights advocates, as being primarily aimed at avoiding or weakening the prospects of bringing perpetrators to ‘justice’. This perception can be attributed mainly to the wide amnesty provisions for perpetrators that were, in the past, predominantly either granted as part of the truth commission’s establishment or provided subsequently. It was argued that this lack of justice and accountability could not meet victims’ needs. The TRC, on the other hand, was intended to be a different form of truth commission. Rather than the ‘blanket’ amnesty for perpetrators provided by previous truth commissions, for the first time in the history of truth commissions perpetrators would be granted amnesty only if they could satisfy certain conditions laid down in the legislation establishing the Commission. Advocates of the TRC argued that these conditions would ensure perpetrator accountability while at the same time being beneficial for victims.”

Maybe it is time for the Australian community to advance the climate change policy debate by choosing an outcome that places the Australian economy on the path to effective carbon emissions mitigation and to do it in the most cost effective manner that promotes economic activity and the living standards of all Australians.

¹⁸ See discussion in Garkawe S, “The South African Truth and Reconciliation Commission: A suitable model to enhance the role and rights of the victims of gross violations of human rights?”, [2003] MULR 14.

Legal implications of the policy debate

The policy debate on climate change has legal implications. In the absence of settled debate and clear policy direction the legal situation is uncertain. There are some laws that are causing responses that will mitigate carbon emissions. But the extent of these laws is limited.

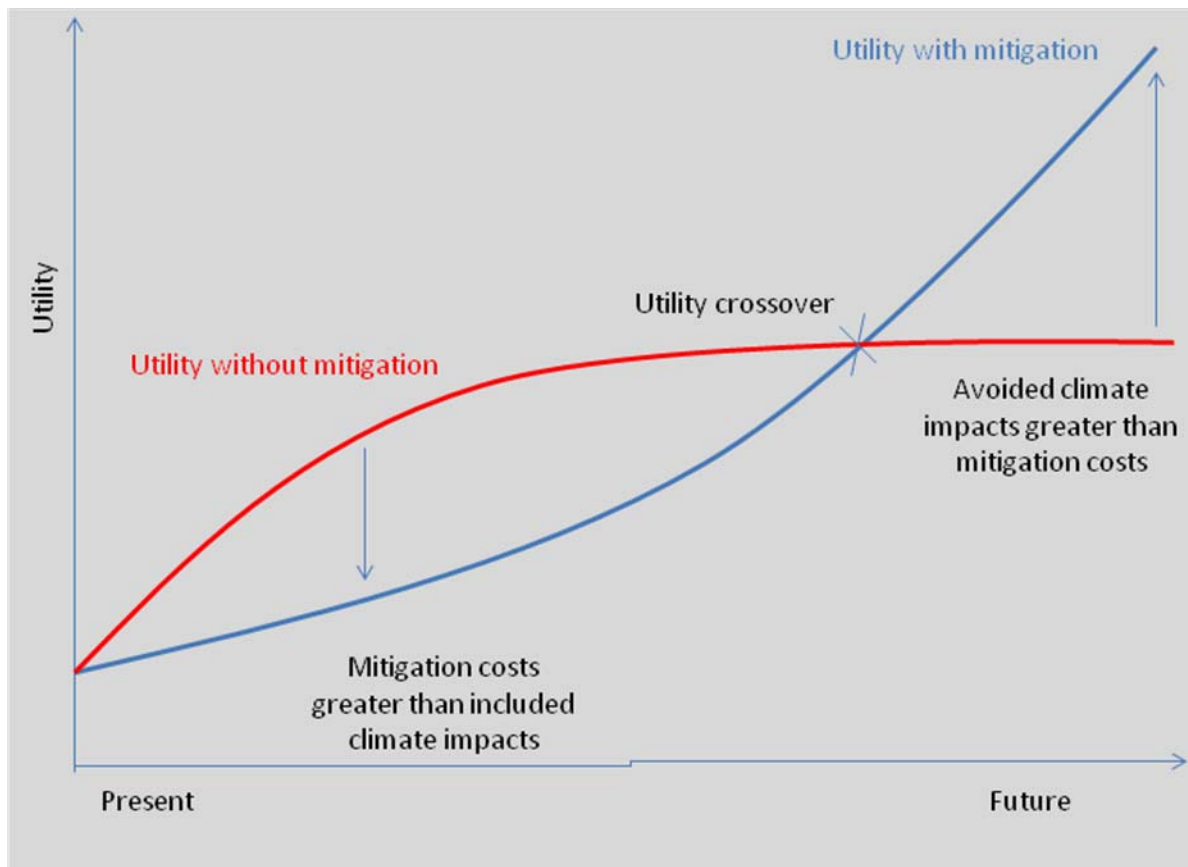
Once the economic policy of climate change is settled the drafting of the legislation can begin. However, in view of the complexity of climate change as the subject-matter and the mitigation responses tending to be as complex, there are critical approaches to the drafting of the legislation.

The legal response to an effective climate change mitigation policy needs to avoid over-prescription and direction to allow polluters to mitigate carbon emissions in an economic manner that produces maximum benefits of reduced pollution with minimal adverse costs. By maintaining and expanding productivity and production thus maximising gross domestic product can polluters afford to put effective mitigation measures and mechanisms in place to provide the benefits of a low carbon emissions environment. The law needs to provide a legal framework that is not cumbersome or too intrusive in the production process. The law must operate at the macroeconomic level to advance Australia's economy to maximise wealth for further mitigation.

The legal framework needs careful drafting to provide certainty for economic agents to take action for carbon emissions mitigation. The Carbon Pollution Reduction Scheme Bill presented a model law that was too detailed but yet too vague. The market system being established under the Bill contained too many rules that tended to confuse the intent for a market of permits. The lessons of the global financial crisis for the trading of securities and derivative products were not observed in the drafting of the Carbon Pollution Reduction Scheme Bill. The complexity of the market model under the Bill allowed for transactions in permits that could contribute to an "asset bubble" in the value of permits.

Annexures

Figure 1: Utility with and without mitigation



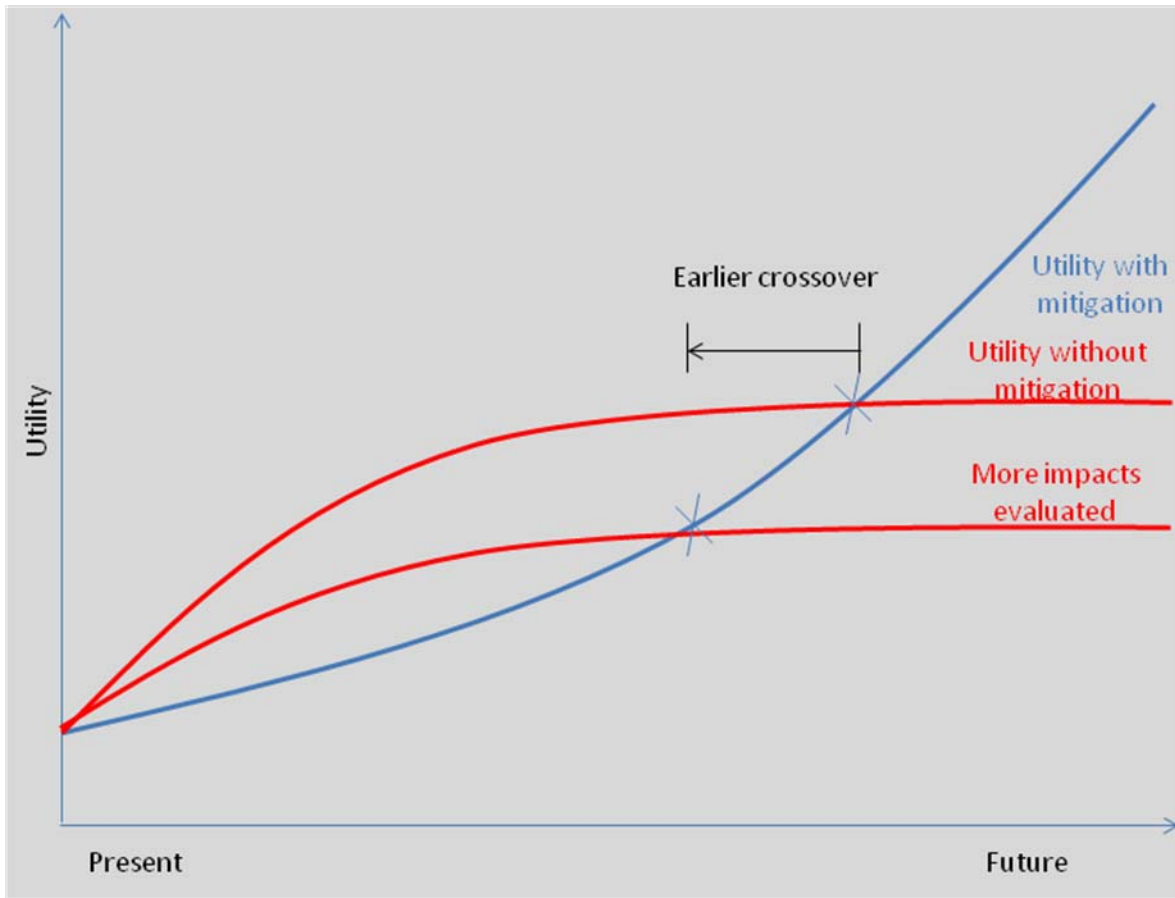


Figure 2: Utility with more climate change impacts taken into account.



About Ian Tunstall

Ian Tunstall is a lawyer practising as a solicitor in New South Wales, Australia. He is also an economist and practises through TUNSTALL Consulting Pty Limited.

Ian writes on legal and regulatory issues, involving both law and economics. He is known for expressing law and economics clearly to help readers irrespective of their experience of the subject matter. A catalogue of publications written by Ian Tunstall can be viewed on his website.

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