

GREENHOUSE GAS REDUCTION AND THE DESIGN OF BETTER MARKETS

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Overview

This article suggests a better Australian way to gain more openly competitive innovation to achieve greenhouse gas reduction and sustainable development in the interests of regional communities, businesses, other organizations and individuals. It requires more broadly scientific approaches to design of a carbon permit trading scheme, to achieve greenhouse gas reduction goals more directly and competitively, than plans which have so far been discussed in Australia. The suggested design of this alternative carbon permit trading scheme draws on the social insurance, administration and competitive investment perspectives of Keynes, Beveridge, Wilenski and Hilmer. These developed over recent decades in Australia primarily through community and work related health and disability insurance, superannuation savings and related investment models which are also guided by national competition requirements and relevant international agreements. Current overregulation prevents markets being effectively informed. In the absence of more broadly scientific structures for managing risk, many more narrow and contradictory legal, economic and scientific expectations will make the achievement of sustainable development difficult or impossible. An audit of large greenhouse gas polluters is discussed later to introduce necessary change. Regionally coordinated, industry and community identification and prioritization of problems which can be solved by a range of simple or complex innovative projects for sustainable development are now required to meet the economic, social and environmental goals of triple bottom line accounting.

Current international and Australian expectations about greenhouse gas reduction appear complex, confusing and confused

In 1990 the World Commission on Environment and Development defined sustainable development as 'development that meets the needs of the present without compromising the ability of future generations to meet their own needs' (Beder 2006, p. 18). The United Nations (UN) Rio Declaration on Environment was adopted in 1992 and provides a set of principles supporting many earlier international agreements, which may be applied on any regional and broadly scientific basis by individuals, communities, governments and members of related industries. Its first principle is that human beings are at the centre of concern for sustainable development and are entitled to healthy and productive lives in harmony with nature. The adoption of the UN Framework Convention on Climate Change in 1992 led to the Kyoto Protocol in 1997. The main difference between the two is that the former encourages countries to reduce greenhouse gas emissions which cause global warming, whereas the latter commits them to doing so in the staged way outlined. The Protocol has three innovative mechanisms for achieving this – an emissions trading scheme (ETS), joint implementation and the clean development mechanism. The main discussion has been about the ETS, which is confusingly named, because it is not emissions which are being traded, but permits which represent emissions.

The above market based mechanisms, as I understand them, appear to require carbon permits (credits) related to the quantity of greenhouse gases emitted during production to be gained by polluters and traded in a way which supposedly will lead to the required and staged reductions of emissions globally. Permit investors, who are initially governments and those polluters who must participate in the scheme, can supposedly identify their lowest cost opportunities for reducing emissions globally and trade their permits accordingly. This market design ideally also attracts the participation of broader financial investment in emissions reduction strategies. However, the Kyoto Protocol is mainly about the relationship of countries to each other in the ideally staged management of emissions downwards and reporting on the results, rather than about the relationship of traders to government or to each other in markets. The Protocol does not clearly explain how trading emissions permits will reduce emissions in a market context or how any assumptions that it does so can be checked. It is mainly about international goals and operations of governments, not the operation of trading systems.

In December 2007, Kevin Rudd, the new Labor Prime Minister, signed the Kyoto Protocol. In a lecture in May 2007, before the election, he said there are five tests for an effective ETS which are that it must:

- Be a cap and trade scheme to be internationally consistent
- Effectively reduce emissions
- Be economically responsible
- Be fair
- Recognize the need to act now

The cap, in a cap and trade scheme, is the level to which an organization's emissions must be reduced, as required by government as a result of its demand for staged emissions reductions across the national economy. One wonders how this is measured well. The Prime Minister is also concerned about fighting inflation first and has emphasised that it is important that a domestic scheme does not undermine Australia's competitiveness and should provide mechanisms to ensure that energy-intensive trade exposed firms in Australia are not disadvantaged. This article argues that the social insurance and related carbon permit trading system which is presented later meets the above criteria for an effective ETS much better than all others which are on offer so far.

A letter received from the Department of Climate Change in March 2008, as a result of making queries to the Minister for Climate Change and Water about a number of implementation expectations regarding the ETS, states that either a carbon tax or an ETS can be used to place a price on carbon emissions. The Acting Assistant Secretary writes:

Carbon taxes deliver emissions reductions by setting a price on each unit of emissions and allowing the quantity of emissions to emerge from the market. This contrasts with an ETS, where government requires emitters to acquire a permit for each unit of emissions and government determines the total number of permits that will be issued in the economy in any given period (the cap). In an

ETS, government *directly controls the quantity of emissions* (my emphasis) and their price is set by the market.

Under an ETS, permits have a value because they are a scarce compliance instrument. The current and future price of emissions permits is the price that firms in the economy have to *pay or acquit* (my emphasis) for each unit of emissions (usually one tonne of carbon dioxide or its equivalent). These prices thus influence firms' production and investment decisions.

It seems to me from the above that the Minister or the Department is confused. A government regulator cannot directly control emissions any more than it can control whether a private sector employee is injured at work. Only the producers of the risks have the power to control them, even if the government regulator pays for an inspector to watch every single polluter closely, which is impossible. Such problems of government apparently pretending to omnipotence, which is common in outdated legislation, were recognised and dealt with in the passing of state occupational health and safety (OHS) acts in the 1980s. These acts provide employers and workers with duties of care discussed later. The government regulator can only encourage employer action to prevent injury, or punish after breaches are clear, or assist with the burden of rehabilitation, depending on the situation. The above letter does not explain whether the unclear term 'acquit' always means 'pay' or can mean something else. Perhaps one should assume that this will be decided by the courts. This is far from a clear start.

Implementing the Kyoto Protocol will also be very slow, costly and have many unknown outcomes, if it is done according to the common Australian custom, which is to try to act while remaining in thrall to a wide range of former uncoordinated, narrow, contested and often outdated legal, economic and scientific doctrines. More direct and effective management of the Protocol would entail governments entering into commitments with major polluters and establishing related industry and community planning processes to identify, measure, prioritize and control greenhouse gas emissions and other major problems of sustainable development. The funding process can also be designed to achieve more competitive markets, as demonstrated later. Better joined up management is necessary. For example, the design of a national carbon trading system concerns those in current discussions on implementation of the findings of the Inquiry into Electricity Supply in NSW (Owen 2007) and has implications for manufacturers, distributors, service providers and consumers concerned about outcomes of these major energy privatizations.

Take opportunities to coordinate policy with more reputable international bankers

By 2008, Australians had voted Labor governments into all nine electorates. This suggests new and general understanding of the costs of many adversarial and therefore pre-scientific practices, which Australia has inherited and proliferated as a result of its earlier status as a British colony, under the continuing power of its Constitution and legal monopoly custom. Gaining sustainable development in this context will be very difficult unless narrowly designed, opaque and dysfunctional administrations, which result from many outdated legal, bureaucratic, professional and academic requirements are fixed.

Community and business interests can be pursued more easily through voluntary, open and broadly scientific management partnerships which competitively identify and prioritize projects to meet sustainable development goals, supported by triple bottom line accounting. This seeks to attain financial, social and environmental objectives. Broadly scientific management perspectives may be achieved through general implementation of comparatively simple risk management principles at work and in communities which are also found in many UN agreements. Some Australians may be familiar with these as a result of health and social insurance requirements, but a lot more education is needed.

The continuation of many older legal and economic expectations of production will lead to major environment degradation and loss of biodiversity, unless corrected soon. They exist partly because a common article of the traditional economist's faith is that the interaction of product or service supply and demand in markets will generally lead to market equilibrium and to a comparatively common standard of living for all, at least in the long run. This, as Keynes noted, is when we all are dead. The rising tide of production, which is mainly made possible through technological and related management innovation, is naturally expected to lift all boats eventually. In practice, the inequalities between and within many rich and poor nations have persisted and in some cases grown much worse over recent decades. Sharp market fluctuations also create many problems for producers, consumers, communities and governments in most countries. Markets are political as well as economic constructs. They are comprised of self-interested players, who are usually the more informed the more intimate they are with financial operations. Primary partnerships between major producers, governments and related communities are necessary to help markets meet their ideal expectations more effectively for all people.

As a result of environmental degradation, including climate change, Australia now faces a similar question to the one Keynes asked in 1939. The UN Declaration of Human Rights means that Australian women are now definitely included in it.

The question is whether we are prepared to move out of the 19th century laissez-faire state into an era of liberal socialism, by which I mean a system whereby we can act as an organized community for common purposes and to promote economic and social justice, whilst respecting and protecting the individual – his freedom of choice, his faith, his mind and its expression, his enterprise and his property'. (Moggridge 1992, p.468)

Edited papers of the Annual Bank Conference on Development Economics entitled 'Governance, Equity and Global Markets' (Stiglitz and Muet, 2001) reflect new understanding at the highest levels of the banking community that more planned investment approaches are necessary to assist markets to meet regional community and related government aims. Many argued that economic crises have shown the need for greater world governance, especially to manage 'public goods' such as financial stability and environment protection. They stated many economists now look beyond 'the Washington consensus', which they define as unconditional liberalization of markets, lack of attention to institutions, and macroeconomic policies geared towards lowering inflation rather than development and employment. They claimed development success requires

high savings, rapid capital accumulation, high levels of training, strong capacity to acquire new knowledge and rapid insertion into international trade. Weak institutions, on the other hand, lead to economic instability and financial crises. Contributors also argued that effective world governance must closely involve employers, trade unions and non-government organizations. However, the Australian government is strongly committed to controlling inflation first. Inflation benefits the wealthy investor through providing higher interest rates on high lending levels, while rapidly reducing their levels of debt. The wealthy can probably wait out the market. However, inflation may drive householders or small, struggling businesses to desperation if repayments cannot be made on modest debts.

The first point of the Prime Minister's five point plan to fight inflation first is that a hard line approach must be taken to fiscal discipline. Achieving this and more competitive business performance depend upon clearer accountability as well as more informed markets and communities, which have the power to avoid dysfunctional costs. The policy direction which is discussed later can now be led by large polluters in energy and manufacturing through audit of their greenhouse gases. This will be necessary under the new National Greenhouse and Energy Reporting Act, prior to establishment of the carbon permit trading system aimed at reducing greenhouse gases and their effects. According to discussion papers produced by the current and previous governments, large greenhouse gas polluters will be provided with an appropriate number of carbon permits which have a value to be determined. These 'permits to pollute' can be traded in the market. Polluters are also expected to reduce their greenhouse gas emissions to meet the staged reduction requirements of the Kyoto Treaty, or pay a penalty. Permit holders may also undertake 'offsetting' investments to reduce greenhouse gas emissions in areas other than their own establishments. In an earlier European trading scheme, governments commonly gave permits to polluters free of charge but in Australia a permit auction has primarily been discussed. On what logical or scientific basis could anyone bid for compulsory items of unknown future value, such as permits? Time and money should not be wasted in gambling over what will happen when goals can be more directly pursued.

Management must be designed openly for evidence based comment and correction

In February 2008, Professor Ross Garnaut released his interim report on the climate change review the Prime Minister had asked him to undertake. His terms of reference included report on:

The economic and strategic opportunities for Australia from playing a leading role in our region's shift to a more carbon-efficient economy, including the potential for Australia to become a regional hub for the technologies and industries associated with global movement to low carbon emissions; and

The costs and benefits of Australia taking significant action to mitigate climate change ahead of competitor nations

Garnaut concluded Australia is relatively well placed to do well in a world of comprehensive global efforts to reduce greenhouse gas emissions and that it is in

Australian interests for the world to adopt a strong and effective position on climate change. However, achieving this depends upon a well structured carbon permit trading system. Garnaut states that the introduction of a price on emissions must be the primary instrument for securing reduction of greenhouse gases and their effects. He states this may either be done through an emissions tax or the issue of permits to be traded. In his view, the latter course, if all work to normal economic expectations, is 'the more direct instrument for securing the Australia's emissions budget' (2008, p. 46.) Will it also reduce greenhouse gases? Garnaut raises a number of potential economic difficulties for Australian government, industries and communities which may arise as a result of implementation of the trading system he describes and also seems to support.

The European experience of carbon trading schemes so far has been that the long-term price of tradable emissions permits is too uncertain to be a driver of systematic technological change in industries where generating capacity investments are normally planned over thirty year periods. For example, a recent article from The Economist, entitled 'Coal power a burning issue' in the Australian Financial Review (AFR) states:

In theory, the carbon price (in Europe) and the threat of one (in the US) should dent enthusiasm for coal. But in practice many utilities are betting that the disparity in fuel prices will outweigh the cost of extra permits to pollute. At the moment permits cost pennies in Europe because governments handed out too many of them.....Although there should be more of a shortage starting next year, the futures price would have to rise from the current 22 per tonne of carbon to over 30 per tonne to prompt a significant switch away from coal over the next two years, according to Henrik Hasselknappe of Point Carbon consultancy.' (AFR 19.11.07, p. 60)

In the United States, Enron began as a clean energy producer but its managers found they could make more money for themselves in highly speculative deals of many kinds, rather than by innovating effectively in either energy production or distribution. (McLean and Elkind, 2004). Was Enron a rare bad apple or a logical expression of a prescientific, anti-competitive, market designed primarily to serve its controlling sectional interests? Rather than wasting time and money arguing the finer legal, economic or scientific points of this theoretically, and perhaps in court, a trading system based on proven risk management principles and approaches in health and superannuation management, which Australia already applies, should be consultatively designed by the Council of Australian Governments (COAG). Adding new, complex, environment related issues to narrow, outdated regulatory approaches, as often occurs in Australia, makes administration increasingly dysfunctional and costly. Construction of an effective carbon permit trading system is an opportunity to abolish all outdated management driven by comparatively narrow sectional interests, in order to adopt coordinated risk management perspectives to meet all community, industry and related organizational interests more directly. That appears to be safer than what is currently suggested and would liberate good innovation.

Under the heading, 'Robust institutional arrangements are needed' Garnaut provides the following early warning:

‘Care would need to be given to the design of the institutional arrangements for administering the allocation and use of permits. Variation in the number of permits on issue or the price would have huge implications for the distribution of income, and so could be expected to be the subject of pressure on Government. There is a strong case for establishing an independent authority to issue and to monitor the use of permits, with powers to investigate and respond to non-compliance ‘(2007, p.65).

The above approach seems irresponsible for any expert advisor to take to government, because the latter is elected to govern. By giving away its power to a body established at arm’s length from itself, government only makes itself more ignorant and unaccountable than it would otherwise have been. I assume that if this recommended system is required by law but goes badly wrong it can only be fixed in court, which is expensive. Governments, industries, communities and all related investors need more open and reliable information to achieve more innovation leading to sustainable development. Without the primary requirement for openness and the potential for evidence based correction by government or its established authorities, arm’s length management can only lead to more ignorance, extra cost, and likelihood of loss, rather than to achievement of investor aims. The common legal perception, that blinding oneself is a prerequisite for correct action, predates scientific views of most problems in any arena and of all related evidence. Ideally, from a scientific perspective, we should be as informed as possible for good decision making to occur in any market. This applies especially to governments.

The success of insurance, taxation, social insurance, or any business venture normally depends on contributor trust. Ideally, this must be based on clear and easily available evidence that the structure and management of any operation is sound and meets contributor, consumer and community goals comparatively effectively. Government cannot do much about controlling financial risks, especially those which can easily be passed on to communities, or sold to other investors, until electors clearly understand the institutions of the market, their relationships, the incentives which spring from these relationships and what these related institutions and individuals are likely to do as a result. From social insurance perspectives outlined later, the design of a carbon permit issue is ideally also aimed at reducing risk by achieving control of inflation and more open, stable, and competitive markets. This can be done by governments and key organizations leading activity to control greenhouse gases in partnerships with other community members, to achieve regional goals which have also been consultatively and more broadly identified.

In 2007, the World Wide Fund (WWF) submission to the National Emissions Trading Taskforce argued that, in principle, ‘either a cap and trade system or carbon taxes are acceptable methods of introducing a price signal’, that will allow the market to determine the most economically efficient approach to reducing greenhouse gas emissions. WWF is opposed to the idea that permits should constitute ‘a property right rather than a licence to emit’. WWF believes that auctions should be the primary means of permit allocation rather than free allocation. However, the scheme design that WWF supports and the greenhouse gas prevention strategies that it provides in ‘A Prosperous, Low Carbon

Future' (2007), suggest that 'a permit to pollute' is more accurately conceptualised as an insurance premium or levy, similar to a workers' compensation insurance premium (which is actuarially determined) or the Medicare levy. It would also serve consumers.

The origins of social insurance and related fund management in Australia

Private individuals, business entities or other groups have traditionally purchased insurance from private sector insurance companies which underwrite (i.e. bear the economic risk) of various potential losses which the premium purchaser may experience as a result of injury and legal suit, unemployment or other unfortunate specified circumstances. Social insurance may be seen as akin to co-operative organization and to taxation as well as to insurance because it is mandatory for all members of an identified community. The degree of risk rating which ought to be reflected in premium prices and ideally related premium management and fund ownership structures are matters for continuing development by Australian governments today. So is the role of competition in social insurance and related savings and investment systems.

Keynes called for the extension of 'publicness', but with the government as leader rather than owner of funds to be deployed with specified social and economic purposes. A related management perspective, seeking stability and full employment through planning and investment of mandated insurance premiums or savings, so as to avoid market fluctuations, was central to development of the British and later Australian welfare visions. The major architect of the post-war British welfare state, described social insurance as 'the system by which every citizen of working age contributes, 'in the appropriate class,' according to the security that is needed' (Beveridge 1942, 11). Beveridge believed each worker should be covered for all needs related to old age, possible unemployment, disability, or other relevant potential costs, by a single weekly contribution on one document, and that all principal cash payments should continue so long as the need lasts. He believed payments should be made from a social insurance fund built up by contributions from the insured persons, from their employers, if any, and from the government. However, he did not discuss the benefits of competition in relation either to fund ownership or management. Garnaut appears to assume that all monetary value derived from the initial pricing of the so-called carbon permits or credits should ideally be managed by the invisible hand of the markets. This seems likely to be a slow, costly and uncertain way of achieving sustainability, whilst handing new wealth to those individuals whose closest partners are those best placed to benefit from rapid market movements.

When the Hawke Labor Government came to power in 1983, it began to address the long-term problem of Australia's increasingly unacceptable terms of trade, primarily through an economic management agreement (an 'accord') with the trade union movement. Industry councils were also set up in manufacturing. These conducted stock takes of industry sectors and developed strategic plans. This process moved employers and workers from an automatic reliance on barrier protection towards strategies which included economic incentives for microeconomic reform to make organizations more competitive in the longer term. This approach is also relevant for services. In 1984 the Commonwealth government reintroduced taxation based universal health care after it had been abolished

under a previous government. Australian Council of Trade Unions (ACTU) wage claims were adjusted downwards to take the cost of Medicare into symbolic account and to link future wage claims with decentralized, enterprise based bargaining approaches, related industry and welfare management and attempts to curb inflation. In 1985 a 2% national wage increase for workers was foregone in return for payment of 3% of wages made in the form of superannuation funds. In 1992, Commonwealth legislation introduced a superannuation guarantee. All employers were called upon to contribute to an award based pool of retirement funds for employees, to be placed in relevant savings and investment vehicles. Government cooperative arrangements with business and community groups, which are designed to gain sustainable development, appear to be most reliably and productively undertaken as logical extensions of these earlier planning approaches.

Although Australian and U.S. health care systems both use the term 'managed funds' their design and fund ownership structures differ. The universal coverage of the Australian Medicare system and its integrated requirements regarding extra, voluntary private health insurance put downward pressure on the prices that all doctors, hospitals and insurance companies charge. In the U.S., health insurance and related care must normally be purchased in the market and many people find it too expensive and go without. Duckett (1997) found the Australian system outperformed U.S. health care services in regard to providing population access, equity of service provision and lower cost, but also had lower service quality. Findings of comparatively poor service quality in Australia are disappointing because of the potential for research and development provided by the comprehensive, national scope of the system and all related data gathering. Since 1986 the Commonwealth has provided funds for health promotion programs as well as for hospital and medical care, to improve health and tackle major, identified problems. In the 1980s the states also established OHS acts with the aim of ensuring safe work places. These provide employers and workers with general duties of care and require the identification, prioritization and control of risks arising from work. Rehabilitation requirements were also introduced to workers compensation acts. Approaches to the general duties of care outlined in OHS acts and in ideal rehabilitation and workers compensation practice are ideally also applied in duties of care to consumers, communities and their environments.

The duty of care approach provides a logical framework for achieving clearer, more informed, effective, stable, identification and control of all related risks, as they arise in places of production on one hand and in communities on the other. In the traditional insurance model, in which the premium fund is owned and managed by the private sector insurance company, the costs of injury are passed on to all who fund the larger pool by their premium or related investment purchases. The courts which settle disputes about causes of injury provide no effective data gathering for preventing calamity or assisting the establishment of the level of future premiums. Court practices are feudal in that an adversarial conception of evidence gathering and treatment are considered socially desirable. From a scientific perspective, which values objectivity and the related search for uncontaminated evidence by all sides highest, such feudally driven practice may easily look like fraud. Adversaries are encouraged to champion their own interests and may hide inconvenient truths due to entrenched doctrines of client legal privilege. Laws are often without specified aims or any dictionary style definitions. The latter classification systems

of shared and consistent meaning are part of the vital logic of scientific approaches to treatment. The prescientific legal discourse generates major opacity and costs which make effective management very difficult. This major problem was discussed in earlier articles in 'Public Administration Today' which were respectively entitled 'From the Constitutional past to the new educational ideal' and 'A healthier approach to justice and environment development in Australian communities and beyond' (2007, 2006).

Problem of increasing legal complexity are very worrying in the light of the new approach to risk management by the Australian Greenhouse Office (AGO), at least under the previous government. The aim of its book 'Climate Change Impacts and Risk Management: Guide for Business and Government', was to 'assist Australian businesses and organizations to adapt to climate change' (AGO 2007, p.8). The primary aim should logically be to reduce greenhouse gases rather than adapt to them. The AGO approach to risk management is different from that required under state OHS acts, which first seek to identify and control the risks of production (which may include greenhouse gases) at the business source. Instead, the AGO requires that individual organizations describe and list how various climate change scenarios may impact on each of the key elements of their organization, and then determine how the business should adapt to meet these problems. It is likely to be very difficult to know whether or how global warming affects a particular business unit, even when it is being subjected to increasing damage by pounding surf. The AGO approach to risk management puts the cart before the horse in a highly speculative and complex fashion which mainly encourages action which is unhelpful to business and regional communities. It invites the expensive involvement of specialist experts but appears less likely to reduce the problem of greenhouse gas production, than to bring calls for compensation for damage supposedly caused by climate change. Such calls are likely be led by lawyers, accountants and their keenest clients. The legal fraternity are already thriving on many unclear, conflicting legal expectations, so it is vital that a rational, simple and consistent view of risk management is widely understood and applied in order to gain sustainable development. It deserves to be better understood in all workplaces and communities. It should be extended, not undermined by new, less promising approaches.

Until the 1980s, workers compensation related insurance funds were managed and owned (underwritten) by private sector insurers under Liberal governments or owned and managed by Labor governments. Today, the benefits of industry and government fund ownership, supported by competitive administration to achieve all scheme goals, whether these are social, financial or environmental, are better understood. In the 1980s in NSW five insurance company insolvencies occurred because insurance company competition on premium price led to pricing wars between the forty insurers writing the business and also led to insurer reserves running low at a time when courts were making increasing lump sum payments (NSW Government 1986). A Labor government introduced the current managed fund structure. The model was retained by the Liberal government which concluded there was a lack of evidence of benefits from private sector underwriting. (NSW WorkCover Review Committee 1989). It has since been adopted in other states. Government and industry own the premium funds, which the board manages according to normal commercial principles, to achieve the legislated scheme objectives. Twelve insurers are contracted to collect premium, manage claims and invest funds on behalf of

government and industry. No sensible government or industry should deny itself the benefits of owning its own premium pool and directing the competitive investment of the fund. It can then reap the investment rewards itself and meet all the scheme objectives more directly and cost-effectively than would otherwise be possible. This management structure promotes cost savings through better opportunities for all risk identification and control, while reducing the instability produced by market driven underwriting cycles.

Towards productivity gains from more scientifically designed competition

Hilmer's report in 1993 to Australian Heads of Government on his independent committee of inquiry into a national competition policy should have led naturally to a highly competitive approach to sustainable development and triple bottom line accounting. He defined competition as, 'striving or potential striving of two or more persons or organizations against one another for the same or related objects' (1993, p.2). However, this late twentieth century idea, that competition need not primarily be for money, has since been largely overlooked as a result of dysfunctional additions to older legislation such as the Trade Practices Act (TPA). A clearer understanding of what Hilmer's approach to competition required but never had the chance to achieve is necessary. The traditional economist assumes that the invisible hand of the market makes everything right as long as monopoly can be avoided (unless the latter is deemed to be 'natural'). Citing its agreement with Hilmer's earlier approach, the Productivity Commission pointed out in its report on telecommunications competition regulation (2001 p.154) that trying to identify the misuse of market power in court is likely to be impossible because the problem is not well defined or apparently amenable to clear identification and related evidence gathering from any legal, economic or related scientific perspective. Global inequality and market fluctuations are evidence that markets do not clear easily, which is partly because of poor information available to investors. The related problem of loss of investment control is ideally addressed by the competition policy Hilmer designed. It should be implemented.

In the traditional economist's view, the market is composed only of traders and the later concept of the consumer (who often lacks comparative knowledge of the traded product or service) may be unrecognised. The Productivity Commission's report of its review of Australia's national consumer policy framework (2008) recommended the COAG instigate and oversee a review and reform program for industry-specific consumer regulation. It is logical to start with an industry based approach to sustainable development as well, if one assumes that the production related management of risks to workers, consumers, communities and natural environments appear most easily carried out together, through the related industry and community management contexts in which they arise as problems. The report of the Standing Committee on Economics, Finance and Public Administration inquiry into the current and future directions of Australia's service industries (2006) stated that the nature of many services limits the scope for productivity improvements, but the reverse actually appears to be the case. Many services, such as finance and insurance, property and business services, electricity, gas and water or transport also represent unavoidable costs for manufacturing and many other businesses which need to be competitive in overseas markets in the interests of all Australians. Such problems can be addressed better from regional industry and community perspectives which are broadly

scientific, as distinct from being driven by many more narrowly defined but ruling legal, financial, bureaucratic, professional or related academic interests.

For example, positive incentives for improvement across the regional industry and community board are necessary, rather than many bureaucratic or academic silos trying to pick winners to deliver small amounts of funds to, at comparatively great expense. The report of the Australian House of Representatives Standing Committee on Economics, Finance and Public Administration inquiry entitled 'Australian Manufacturing: Today and Tomorrow' (July 07), referred to the general business abhorrence of government financial strategies which attempt to 'pick winners', but these are often used by government. The report discussed the Export Marketing Development Grants (EMDGs), research and development tax concessions, and the case of venture capitalists. It appears that many of those in manufacturing, no doubt like many academics, feel that hopelessly competing for comparatively small amounts of money is a waste of organizational and related government time and money. The Business Council of Australia wants inefficient taxes and charges on production cut. The ACTU submission stressed that Australian industry should progress 'up the value chain'. Bluescope Steel pointed out that one of its major priorities is 'ensuring greenhouse gas regulations do not make Australia's steel industry uncompetitive' and that China is the world's largest producer and consumer of steel and is naturally a major polluter. Such views suggest many wider opportunities exist for the proposed design of more direct routes towards sustainable development suggested here.

The National Greenhouse and Energy Reporting Bill (2007) is a key opportunity to replace dysfunctional regulation and to assist attainment of more informed markets and better skills development in future. The Senate inquiry into the bill noted there are fifteen separate programs with greenhouse and energy reporting requirements. The bill presents a chance for an investigative baseline audit of major polluters to establish better scientific foundations for carbon measurement, pricing and permit trading and for better industry and community based innovation and regional development in future. Without an effective framework for management of sustainable development, all trading to improve performance is likely to remain highly speculative, with all the associated high risks and costs. The World Wide Fund Climate Solutions Vision for 2050 (WWF 2007) and other key scientific and regional studies, appear ideally implemented in related investment contexts. The WWF recommends breaking the link between energy services and primary energy production, strategies to stop forest loss and concurrent growth of low-emissions technologies, development of more flexible fuels, energy storage and new infrastructure and the displacement of high carbon coal with low carbon gas. Carbon capture and storage potential must also be addressed. The national framework for the management and monitoring of native vegetation, the national strategy for the conservation of biological diversity and the national action plan for salinity and water quality also appear to be most logically considered for direct implementation and as greenhouse gas offset investments in related regional industry and community management frameworks.

The ‘arm’s length’ trustee in superannuation management

Direct action which attempts to manage the risks of climate change more scientifically to achieve the desired objectives appears necessary, rather than relying primarily on the market managers of financial risk to do the job. Recent press descriptions of the causes and effects of US mortgage defaults have demonstrated the problems of the latter risk management approach, which fuels instability in the business environment and all its related costs with apparently little concern or capacity to prevent any kind of future calamity. Australians seek protection from inflation. Small businesses and home buyers face many worries from increasing debt servicing requirements. The elderly may fret about investment uncertainty related to their superannuation income. Fix their problems.

The idea that establishing fund management and/or risk underwriting bodies at arms length from an original body will guarantee more objective management of the funds appears unlikely to be true if the appointed trustees have secret relationships and drivers of their own. Yet this idea often appears to be a normal expectation in the financial world. This increases general ignorance and all related costs of production. More openly and broadly scientific approaches to fund management are needed to achieve triple bottom line accounting and sustainable development, but those who most easily benefit from increasingly opaque and complex dealings have good reason to resist more open and informed approaches. The report of the Parliamentary Joint Committee on Corporations and Financial Services (2007) on the structure and operation of the superannuation industry unquestioningly supports current requirements that superannuation funds are ideally managed and/or underwritten at arm’s length by separate trustees of the funds. It recommended, however, that treasury conducts a review of laws and regulations governing superannuation funds to identify how they may be rationalised and simplified. There is a prior need to describe and justify the existence of the funds’ trustees and their wider aims and relationships. Otherwise, Australian producers and related saving and investment communities may be paying for the privilege of increasing their own ignorance, costs and loss of control over their financial affairs.

The report recommended that trustees of superannuation funds should publicly tender their key service provision agreements but Labor committee members resisted this. They thought superannuation has been ‘governed by the trustee system in a sound and effective manner’ and that publicly tendering key service provision agreements implied broader, ‘impractical and unnecessary interference in the internal operations of business’ (2007, p. 199). On the other hand, if industry superannuation funds freely tendered their key service provision agreements, this would encourage the market through educating it. This seems highly appropriate if one also assumes that perfect information, perfect competition, perfect accountability, perfect risk management and perfect democracy are all logically and positively related. The necessity for structural separation of the superannuation fund and its trustee to gain good management practice are often affirmed but never explained in the report. The historical background it presents suggests the practice is likely to be a regulatory anachronism which increases scheme costs and reduces both transparency and accountability. This requires further investigation.

The way forward through more open audit and innovation

The best way forward now seems to be for the Department of Climate Change regulations policy paper entitled 'National Greenhouse and Energy Reporting System' (Feb. 2008) to be adopted as an industry code of practice and for an audit of the greenhouse gas emissions of large polluters to be undertaken to consider and report on the practical adequacy of the current directions in the department's national greenhouse and energy reporting system discussion paper entitled 'Technical Guidelines for the Estimation of Greenhouse Emissions and Energy at Facility Level (Energy, Industrial Process and Waste Sectors in Australia) (Dec. 2007). The importance of codes of practice, as they are used under OHS acts, is that they provide the level of flexibility which is necessary to achieve further innovative advancement and all the related benefits of more scientific practice. Approved codes of practice are ideally followed unless another course of action appears safer, according to the specific requirements of a particular situation. Workers in health care apply a similar approach in that they ideally diagnose and treat each person after consideration of the apparently relevant body of scientific evidence. The treatment may vary as far as this appears to be necessary to meet the specific health needs of a particular individual's situation. The reasons for deviation from the generally expected expert practice should be documented. This then contributes to bodies of related information which are studied to improve treatment of both common situations and atypical ones.

The Department of Climate Change regulation policy paper states an external audit will be undertaken by an external auditor who may use an audit team. However, no individuals who represent the registered corporation can be members of the team. The advantage of having a member of the registered corporation on the external audit team would be in order to inform it about any sources of confusion. This will promote mutual learning and lead to more informed and less vague reports by external auditors, who also cannot escape their responsibility for producing the final report. Without such participation, any recommended audit process is more likely to lead to lawyers, rather than to mutual education, if the auditors make an unavoidably ignorant mistake in relation to an organization's operations and the latter then takes understandable umbrage. Both sides may then go into their respective, secretive bunkers, until all come to court. Everyone can learn and fix mistakes quicker and cheaper without lawyers if more communicative, scientific and investigative approaches are adopted and potential improvements discussed.

So far, the technical guidelines discussion lacks key definitions which are necessary for comparable and scientific practice. For example, the definition of indirect emissions relates only to electricity use, which states, 'From the point of view of the electricity purchaser, these emissions are indirect emissions as they occur 'off-facility'. It seems likely that only its own direct emissions can be effectively measured by any organisation and that community based risk management processes are more appropriate to deal with 'indirect emissions'. This approach appears consistent with the requirements of OHS acts on one hand, and community health management on the other. (For example, one may identify, prioritize and attempt to control problems contributing to musculoskeletal injury at work or in any other community context.) The technical guidelines paper states that

organizations can use a range of different Australian or international standards to guide their greenhouse gas measurement activities and where there are no applicable standards the sampling and measuring procedures should be carried out where possible in accordance with international industry best practice guidelines. This seems likely to produce wide variation in what similar organizations will do in sampling and measurement practice. Practical industry based investigation and recommendation through audit is now necessary to gain more industry agreement about the best standards for organizations to use for evidence based and consistent practice to meet all scientific aims. This is ideally investigated during a preliminary and early audit process, conducted as an experiment.

Garnaut does not define innovation, in comparison with continuing and improving development of production methods on one hand, or pure research conducted in an academic environment, on the other. The former approach seems more likely to be designed to solve a particular practical problem of production or service. This innovation process ideally also creates a learning culture. Comparatively few Australian employers appear able to undertake or support much scientific and technological research and development on their own behalf. However, across the board benefits may be derived if industry leaders, their organizations and members are willing to participate in broader, more open, regional community planning approaches which also address effective communication, skills development, education, and research to achieve national objectives related to control of greenhouse gas emissions and sustainable development.

This direction should be encouraged by broadly available, clear and cheap risk management education and by making key undergraduate and related curriculum content openly and freely available to all, so that research training for postgraduate students can be built more transparently and effectively on this clear basis of promotional and certifiable knowledge. This would benefit Australians and any others who model their curriculum or similar approaches to governance for sustainable development upon it. An open curriculum approach would also be the most obvious and effective way of developing skills quickly and flexibly. It would be helpful for fighting inflation and for business and community innovation and cost cutting. The closed, computer-based, distance education initiatives which Australian universities have funded in the past decade are comparatively little utilized (Gallagher 2000; Nelson 2002), their production costs are more expensive than classroom teaching and they have not made money (Marginson 2004). These products are not open to scrutiny so quality cannot be judged. Openness will improve it.

Conclusion

The history of Australian health service provision, work injury insurance and superannuation suggests that more clearly related risk management approaches of the kind that apply to protecting workers and community health should also be applied to protect or enhance natural environments. Management of the risks of climate change should be undertaken in these related regional community and industry contexts. The government should price and manage the carbon permit issue to encourage more sustainable development. More open and broadly scientific management approaches to permit design and trading would also enable many legal, bureaucratic and professional cost reductions.

Governments, industries and communities should now cooperatively establish regionally coordinated, consultative and transparent planning, risk management and related fund management structures, to support key sustainable development goals. Social insurance management and investment models which lead to sustainable development can be introduced with an audit of greenhouse gas emissions. More informed, competitive and freer markets can be ushered in by big polluters with government, industry and community help. The government ideally provides an agreed number of carbon permits, with a scientifically identified value. The permit issue is ideally designed and managed to control inflation and attain more open, scientific, stable, and competitive markets, which enable industry and community investments that are directly related to attaining sustainable development. Polluters choose either to reduce their greenhouse gas emissions at the business source, or invest in the control of related problems in surrounding communities.

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