

## SUBMISSION

### TO THE INQUIRY BY THE SENATE SELECT COMMITTEE ON CLIMATE POLICY

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## SUMMARY

A broad-based economic instrument such as the proposed emissions trading scheme (ETS) is essential in lowering emissions in Australia. Such a scheme must have demanding targets, be accompanied by a range of complementary measures, and not have serious loopholes. This submission addresses the need for two major complementary measures, and points to a major loophole.

Lowering emissions amounts to technological change, but many obstacles to such change cannot be overcome with a broad-based, long-term economic instrument like the ETS. The ETS will be less effective and less efficient if there is over-heavy reliance on it alone. Obstacles not addressed by an ETS tend to be shorter-term, not of a financial nature, or those that cannot be overcome by the firm or industry alone. Such obstacles include regulation, lack of external infrastructure, short-term but heavy investment needs, research and development costs, and workforce training inadequacies.

Government action is essential in overcoming some of these obstacles, and can assist through strategically directed support with others obstacles. Above all government can assist with the uncertainty that comes with all such change. A well-tested means of providing such assistance is through industry agreements or plans. Successful precedents are the Button industry plans which assisted industry to restructure in the face of an economic challenge in the 1980s, and currently, industry agreements operating in a number of European countries to lower global warming emissions.

The government should therefore develop, progressively, industry agreements with every industry that is a large emitter, and in particular with every industry that receives free permits or other assistance under the ETS. A key purpose of these agreements is better government knowledge about the real costs and obstacles facing different industries (or firms). Removal of obstacles and better knowledge by government would allow a more demanding reduction target in time.

The outstanding case for an industry agreement, in the form of purposive planning in this case, is in relation to the crucial electricity industry. This industry provides the key to most emission reduction in Australia. It is also unique in being an essential service, with a monopoly grid, with much government ownership, and highly regulated.

The Garnaut review, and the recent study by the Academy of Technological Sciences and Engineering, both have commendable recommendations on the need to plan the grid for renewables, the need for more and better directed spending on research, development and deployment, and generally a far more purposive approach to the industry than is in the White Paper. The latter instead speaks of concerns about energy security, proposes large grants of free permits worth \$3.9bn, and proposes spending on renewables R and D of only \$70m a year.

Because of the crucial role and unique characteristics of the electricity industry, the government should take the Garnaut and ATSE recommendations to their logical conclusion and appoint a National Electricity Transformation Manager. This manager should develop a plan for an ambitious reduction in emissions from the industry far greater than the Renewable Energy Target, which promises electricity

emission levels in 2020 the same as now. This plan should be flexible on particular technologies, but look to have in place early large-scale demonstration plants. The manager should have the expertise, regulatory powers and financial back-up to drive ambitious technological change, while being able to assure government about energy security. Success with the plan would allow a tightening of present targets.

A major loophole in the White Paper is its announcement that there will be unlimited scope for buying overseas permits and offset credits. In the view of one expert, this will mean that 70- 75% of abatement activity spurred by the ETS will take place overseas. This means that actual emissions in Australia will be higher in 2020 under either the 5% or the 15% target.

This appalling outcome would mean that there will be little technological change in Australia, and no preparing for a more sustainable future. Instead, Australian entities will scour the globe looking for the cheapest permits or offsets. Many of these have minimum credibility as genuine emission reductions. This outcome will lead to double counting in the court of public opinion and political negotiations. This loophole could reduce the ETS almost to uselessness, in Australia's response to the global warming challenge, and amount to a pointless financial burden on Australian entities, like a carbon tax paid to other countries.

Under the ETS, if voluntary actions are taken to reduce one of the covered emissions, such as installing solar hot water to use less electricity, or driving less to save petrol, there will be no reduction in overall emissions, because these actions will just free up permits to be used by others. The target, of permitted emissions, remains the same. Knowledge about this will have a disastrous effect on the incentive for households, small businesses, and government and other organisations of all kinds, to take a wide range of voluntary emission reduction measures. It could well destroy the growing industry built on such voluntary actions.

This serious flaw can be easily fixed in various ways, but broadly by estimating emissions reductions from voluntary actions, and lowering the target to that extent. This measure would reassure the public that their actions mattered, and save a growing industry which is helping Australia make necessary technological change.

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### INTRODUCTION

A broad-based economic instrument such as the proposed emissions trading scheme (ETS) is essential in lowering emissions in Australia. Such a scheme must have demanding targets, be accompanied by a range of complementary measures, and not have serious loopholes. This submission addresses the need for two major complementary measures: the need for complementary industry agreements or plans, particularly for the crucial electricity industry; and the need for additional actions so as not to undermine the voluntary sector. It also points to a major loophole, the unlimited buying of permits or credits from other countries.

### INDUSTRY AGREEMENTS OR PLANS

#### **Relying largely on an ETS ignores other obstacles to technical change**

Dealing with global warming is in essence about transforming technology, so that economic activity continues with no or low emissions. The reason this technology transformation is difficult is because initially at least new technology is more costly than existing technology. Thus incentives (either positive, such as subsidies, or the removal of unwarranted obstacles, or negative, such as a cost imposition on emissions like a carbon tax) are needed to move to this new technology. In fact both are needed, to address different obstacles to change.

A long-term cost imposition on emissions, such as a carbon tax or a permit price in an emissions trading scheme, is an essential element to redress the lower costs of existing technology, put new technology on a competitive footing, and to address the long-term external costs on society of continuing with existing technology. The setting of the level of such a tax should be based on the long-term cost disadvantage that new technology suffers from, in relation to the long-term lowering of emissions which is being sought. This is the basis for current emissions trading schemes, including the one proposed for Australia.

However, relying largely or solely on this approach disregards many obstacles to technology change which cannot be addressed by this long-term cost imposition approach, or where such an approach is a highly inefficient or ineffective way of doing so.

#### **A simplistic example**

To give a simplistic example, imagine that there is a new, low-emissions technology which is only slightly more expensive to run over the long-term than current technology, so that only a small carbon tax or permit price is needed to force its introduction. However, there is an outdated regulation relating to some other field that simply prevents its introduction. Raising the tax or permit price to even very

high levels, which are unwarranted on a long-term economic basis, will not force change, because the regulatory block remains. The way to bring change in this case is to impose the modest carbon tax/permit price, and concurrently take action to remove directly the regulatory obstacle.

What this simplistic example shows is that technology change needs to advance in two complementary and equally important ways: addressing underlying long-term cost realities, as well as more immediate obstacles to change. To rely solely or largely on one side only is economically inefficient, and likely to be ineffective.

### **Many types of obstacles to change**

In fact there are many types of obstacle to technological change in industry different from adjustment to long-term underlying costs. These include:

- heavy early, 'lumpy' investment costs;
- need for research and development on new technology;
- lack of experience with new technology;
- costs of a retrained workforce;
- cultural resistance to change, and the weight of inertia;
- regulatory obstacles from all three levels of government;
- lack of necessary external infrastructure. There may well be a situation where such infrastructure is waiting for the new technology to be in place before being provided, in other words, a chicken and egg problem;
- generally, uncertainty about new courses of action compared with the certainty of not changing, something which will weigh heavily on any investment decisions by those under pressure for change.

### **Key role of agreements with government**

It is clear from this that government either has the central role in overcoming obstacles (such as with regulation and infrastructure), is the key agent that can help address other obstacles (such as training, cultural change, and information), and is the only source of strategically directed financial support (such as for research and development, and for help with early, lumpy investment costs).

Above all, those facing pressures for change need to be assured that they have informed friends in government to facilitate change and smooth the way as far as practicable. This essential facilitation by government, to accompany the underlying financial spur from an economic instrument (the carbon tax or permit price) is best conceived of as 'industry agreements', which may often of course involve working with individual firms. There are some successful precedents in Australia and overseas of industry agreements, relating to industry adjustment for global warming and tariff reduction, as follows.

Setting in place industry agreements in relation to the limited number of industry areas where most emissions occur would allow far more certainty about the feasibility

and cost of emissions reductions, and could therefore allow the progressive tightening of targets under the emissions trading scheme. Adoption of the industry agreements approach implies that the 2020 target, for instance, would be flexible in the direction of making the target more demanding.

### **The Button industry plans**

In the 1980s Australia went through a period of extensive reduction of tariff protection of a range of industries, as part of a broader approach to make the Australian economy more efficient. It was widely expected and feared that a great deal of Australian manufacturing would simply disappear under the new cost competition from imports. However, others, particularly Senator Button, the Minister for Industry, felt that Australian industry could successfully adjust and survive in significant form in this new, financially harsher situation. This view proved largely correct.

An essential element in this adjustment, however, was the development of industry plans for major affected industries, known generally as the Button industry plans. These plans did not involve financial subvention of industries designed to negate the new competitive pressures. Rather they variously involved measures such as highly targeted financial assistance, like bounties dependent on investment by firms, support for research and development of new technologies, support for worker retraining, involvement of industry players, government and stakeholder groups in cooperative consultation, and a focussed use of government purchasing power. Above all, the focus of the plans was on cultural change.

The main industries involved covered cars; clothing, textile and footwear; steel; pharmaceuticals; shipbuilding; and information technology. Measures were also taken in other industries such as aerospace and telecommunications.

The success of these plans is a significant lesson for the major restructuring and adjustment of certain Australian industries which is needed to reduce global warming emissions here. To quote Senator Button, in seeking such industrial adjustment it is naïve to think that 'market forces will sort out all the problems'. The market mechanism of an ETS largely on its own is inadequate for the major adjustment needed in the few key industries which need to change.

### **Emission reduction industry agreements in Europe**

In 2003 the Australia Institute published a report by this writer on aspects of climate change policy in Australia and overseas, titled 'Missing the Target - An analysis of Australian Government greenhouse spending'. As part of work for that report a review was done of emission reduction measures being adopted at that time by developed countries, mostly as reported in those countries' Third National Communications to the UNFCCC.

One conclusion from that review was that most of these countries had adopted plans

or arrangements specific to particular industries to reduce emissions in those industries, mostly involving pollution control measures, together with voluntary agreement measures. Countries with a particular emphasis on this were Germany, UK, Japan, Netherlands and Switzerland. In other words, industry agreements in this area is a well-established approach in a number of countries.

An example of such an approach, as currently carried out, is that of the Climate Change Agreements administered by the environment department in the UK. In the UK there is a Climate Change Levy, a tax on energy use and other emitting activities, quite apart from the requirements under the EU emissions trading scheme. However, under the Climate Change Agreements, energy intensive business users can receive up to an 80% discount from the Levy if they meet challenging energy efficiency and carbon saving targets. The Agreements can be at sector level (industry-wide) or at the level of individual businesses.

Industry agreements to reduce emissions, as complementary measures to emissions trading schemes or carbon taxes, is therefore a well-established process in a number of developed countries.

### **Industry measures in Australia**

Although there is a range of measures taken or proposed by government in Australia for encouraging industry to lower emissions along side the proposed ETS, measures which could provide components or support to industry agreements, this essential complement to broad economic measures such as the ETS, have not been put in place in Australia.

The various spending programs of the Commonwealth do not amount to working with industry in a consistent way, within a cooperation or negotiating framework for seeing that obstacles to lower emissions by industries are removed; rather they are spending programs where individual projects are funded in an essentially uncoordinated way so far as being taken up by industry is concerned.

Most of the spending is on research and development of new technologies, on renewables and carbon capture and storage. Desirable as research and development are, there is no ongoing process for getting lower emissions technology actually working in industries.

A major exception to this is the Renewable Energy Target for the electricity industry, which is discussed further below.

It is interesting that the Liberal Party has endorsed this industry approach in its position that if an Emissions Intensive Trade Exposed industry can show that it has achieved world's best practice, then it should receive 100% of its emissions permits free. This is in effect applying a demanding technical standard to an industry, although the reward of 100% free permits means that it would be quite outside any

pressure from the ETS to reduce its emissions further, or pay any price for them.

The outstanding case for an industry agreement is the electricity industry.

## **Transformation of the electricity industry**

### **Key role of electricity industry**

According to figures in the Green Paper, about 50% of Australia's emissions are from the stationary energy sector, most of which comprises the electricity grid. Transformation of this sector to low or no-emission sources of energy is thus central to reducing Australia's emissions. But the significance of the stationary energy sector is even greater than these figures suggest, because the most likely way for much transport to become no or low-emission is to switch to electric vehicles using electricity from non-emitting sources. Further, another source of emissions, fugitive emissions, would be greatly lessened if there were a switch to non-polluting electricity.

Consequently, so far as the supply side is concerned, transformation of the stationary energy sector to no or low-emissions easily dwarfs in importance all other actions to lower emissions. It relates to about 90% of all emissions covered by the CPRS, and two thirds of all Australia's emissions. If such a transformation occurs, reduction of emissions will be successful; if not, reduction will fail.

Given this central importance, the White Paper proposes purposive activity to transform the electricity sector (even though it has a heading using these words). The 3.9bn to be granted to emissions-intensive electricity generators is, amazingly, only conditional on them maintaining generation capacity, rather than transforming themselves. Only \$70m a year is to be spent on research, development and deployment of renewables in the sector, with no indication of sector planning to make this small sum effective. Higher spending is proposed on the chimera of carbon capture and storage.

### **Unique features of the electricity industry**

The obstacles to this smooth transformation are: inadequate grid network, which works against plant in new locations, which might have to bear disproportionate transmission costs; the high costs of research, development and early commercialisation of new forms of generation; and new plant having to compete with long-built existing coal-fired plant which has been financially written off by its owners, though still productive, and which can thus compete unfairly because of prices that were able to be charged in earlier markets.

There are some unique features of the electricity sector. It provides an essential service, through a monopoly grid. Much of the industry is still government owned. The cost of new generating capacity is huge, coming in very large individual plants.



Different types of generation differ greatly in their ability to come on stream quickly. All these features mean that the market for electricity is regulated to a unique degree. These obstacles and unique features, and the unique size of its emissions, suggest an indisputable case for government to take a direct hand in transforming the industry, in a purposive way. However, the picture painted in the White Paper is very different from this.

Instead of this purposive approach, the White Paper discusses the problem of energy security, or in other words the political nightmare of blackouts, and reassures itself that these are unlikely, but clearly there is a worry here about something beyond its control. The less competitive areas of the generation industry are to be given \$3.9bn equivalent in free permits, without corresponding commitments from the receivers of this concession to change. In other respects as well the industry is in a strong position. Because of the strong inelasticity of the demand for electricity, it is in a strong position to bid for the remaining permits it needs, pushing the adjustment task to other areas under more competitive pressure but where adjustment costs may actually be higher. The industry is in a strong position in regard to knowledge about the economics of electricity supply, so it is in a strong position to argue the uneconomic nature of new forms of supply which will threaten demand for electricity from its existing investments. Overall, the White Paper paints a picture of a weak approach to a powerful industry, when a strong and purposive approach is feasible and necessary.

### **The Renewable Energy Target**

The government is committed to a Renewable Energy Target, of 20% of electricity from renewables by 2020. This in fact is a welcome case of industry direction, and would be a core element of a more comprehensive industry plan for the electricity industry. However, of itself it is inadequate: given current renewables supply of about 7% of electricity, with a forecast rate of electricity demand growth of 1.6% a year (or in fact a rate of growth well under this), new capacity under the RET would for the most part just meet increased demand, but not cut into supply from existing fossil-fuel generation. The RET could therefore be met without any significant reduction of emissions from non-renewable sources. (Also, the Clean Energy Council, the industry group of renewable suppliers, argues that the current proposal to phase out the target requirement after 2025 will make for long-term investment insecurity, so as to stall investment from 2014, at a level equal to only 15% of supply in 2020).

The limited requirement under the RET, combined with the strong position of the electricity industry discussed above, as well as the unlimited scope to buy overseas credits (discussed below) make it quite likely that there will be little or no change in the existing electricity industry by 2020.

### **Garnaut Review**

The Garnaut review, to its credit, in contrast to the Green Paper, clearly recognised

the crucial and special nature of the electricity sector. This issue is discussed in chapters 16, 17 and 20 of the Garnaut report. Garnaut recommended some key additional measures to overcome the particular problems of the sector. Broadly he recommended that there be an independent body to fund and coordinate research and development through to early commercialisation, of promising technologies. Although this could cover more than the electricity sector, in fact he lists electricity generation as the first choice.

Secondly, he recommended that a national transmission planner ensure that the grid is adequate to remove any unfair burdens on new forms of generation. The best network to facilitate a range of feasible new forms of no- or low-emission generation should be built. He referred to the California Renewable Energy Transmission Initiative as an example worth examining.

### **ATSE Study**

In February 2009 the Academy of Technical Sciences and Engineering published an authoritative and comprehensive study of the electricity industry entitled 'Energy Technology for Climate Change - Accelerating the Technology Response'. Based on a large amount of data summarised in the study, it recommended among other things: \$6bn to be spent on research, development and deployment of new technologies by 2020 (a level about twice what the Commonwealth is presently proposing); a new Energy Research Council to run this spending; and sufficient spending on new infrastructure and the grid to enable new technologies to compete fairly. It concluded that the ETS was 'a necessary but not sufficient condition for timely new technology deployment'.

### **National Electricity Transformation Manager**

The Garnaut and ATSE recommendations clearly point to a far more purposive approach to the electricity industry, but to bring their proposals to their logical conclusion one further step is needed. To overcome the remaining major problems of uncertainty that would plague any transformation of the sector, the government needs to create a national electricity transformation manager. This manager would essentially ensure that the smooth, optimal long-term transformation of the sector would take place. This would involve planning the programmed, progressive introduction of no and low-emission plant into the grid, based on flexible use of a suite of new technologies which can compete long term, based on a likely long-term rising permit price.

The manager would see that the thrust of the Garnaut and ATSE concerns are met, but also ensure that other uncertainty and market manipulation obstacles are removed. The manager would have the regulatory powers and expertise to facilitate change, in cooperation with the industry wherever possible. Funding may be needed to ensure the manager's ambitious but feasible transformation occurred. This could come from revenue from permit sales, from existing climate change programs, or there may be a need for additional funding. Also, any compensation paid to the electricity sector as a 'strongly-affected industry' should be provided on the basis of plans by the

recipients to assist in the transformation of the sector, rather than compensation acting as a means for undermining the transformation of the sector. This latter could happen if compensation were just used to, in effect, maintain high-emitting plant in place.

The work of the manager would make the ETS no longer a hostage to uncertainty and forces beyond the control of the government, in relation to the largest source of emissions by far. Instead the manager would facilitate change in a purposive way to meet the objectives of the ETS, with scope for a more demanding target in time.

### **Other Industry Agreements**

Beginning with the largest emitting industries, the Government should proceed to set up industry agreements wherever they promise to be useful. Industries would have an interest in them being established, both to help overcome cost obstacles to their emissions reduction, and thus assist them in meeting the pressures of the ETS, but also in meeting the longer-term emissions reduction challenge, a challenge which is likely to become more demanding in time.

In particular, however, all firms which receive emissions-intensive trade-exposed free permits, should be required to be part of an industry agreement, or an individual firm agreement. These agreements should be aimed at the firms working towards world's best practice in emissions reduction.

Setting up industry (or firm) agreements will be a challenge, requiring knowledge on the government side of the costs and technologies of the industries or firms. This may require time and the taking on of well-informed and expert staff by the government, or the use of independent consultants, perhaps with experience in the relevant industries. However, given the enormity and long-term nature of the global warming challenge, and the large size of both ETS permit revenue and of free permits under the scheme, these cost to government of industry agreements will be small in relation to the potential benefits.

As with the reductions benefits gained under the national electricity transformation manager, the relationship of industry agreements with the target set under the ETS is that measurable and significant success with emissions reductions under the agreements would lead to a more demanding target than that set at present, which relies only on the ETS and existing programs. In other words, the 2020 target needs to be flexible in the direction of a more demanding target, if industry agreements and the national transformation electricity manager point to greater emission reductions being achievable than is now envisaged.

### **UNLIMITED BUYING OF OVERSEAS PERMITS**

In the Green Paper on the ETS it was suggested in the summary that the ability to buy permits in other Kyoto-recognised foreign permit schemes, such as the EU scheme,

or the ability to buy Kyoto-recognised emission reduction certificates in other countries, would be limited, just as such an ability is strictly limited under the EU scheme. However, the White Paper states that that Australian entities required to buy permits under the ETS will have an unlimited scope to buy foreign permits or credits to satisfy the requirements of the ETS.

This is a disastrous loophole in the scheme, which has the scope to reduce the Australian scheme almost to uselessness, for the following reasons.

### **Most abatement to take place outside Australia**

Under the White Paper proposal it seems that emitters in Australia will be able to scour the globe to find the cheapest permits or reduction certificates, and use these to satisfy ETS requirements. The result according to one expert, Elaine Prior of Citigroup, (quoted in the Canberra Times of 15 March 2009) is that 70-75% of all abatement activity under the scheme will be overseas, not in Australia. To quote her words, 'this is contrary to the concept that transformation of the Australian economy will drive green jobs and domestic economic growth'. Given the nature of foreign permit and reduction certificate markets, this appalling outcome is an entirely realistic, not pessimistic, forecast.

This huge leakage of permit requirement could well come about because of the likely low prices of permits or certificates somewhere in the world. For instance, it is likely that there will be a very low price for, say, forest protection emission reduction certificates in developing countries. The recent experience in Europe of a low price for permits indicates the possibilities for finding low cost permits somewhere in the developed world.

### **Lack of credibility of overseas permits or offsets**

Many overseas permits or offsets will continue to lack credibility. In particular, emission reduction certificates in developing countries are highly suspect. Such certificates are fundamentally different from emission permits: they are credits for not continuing emission activity, and thus rely on a 'business-as-usual' assumption, which is essentially a guess about the future. This is referred to under the term 'additionality', in other words: did the funding of the offset really amount to a genuine addition to the situation, so that only it brought about reduced emissions, or were the emissions going to fall anyway? It seems likely that for most Kyoto offsets to date there was no 'additionality', because most projects were well under way, were going to be completed, before offset credits were sought and obtained.

Take the case of buying a forest preservation certificate in a developing country. The validity of this certificate as proof of emissions genuinely being avoided relies on the belief that the forest would have certainly been destroyed without the buying of the certificate; that the forest will never be destroyed in the future, perhaps many years hence, despite the common occurrence of, say, illegal logging activity;

that the forest would not have been preserved anyway by some domestic action by the country concerned; and that preserving this piece of forest does not just direct an undiminished demand for logs or plantation land to some equivalent neighbouring area.

In the case of funding a new, lower-emissions power station in a developing country, there are the questions of whether a new efficient power station would have been built anyway, and for how long it will remain lower-emission as it wears out and needs to be maintained. These questions point to the inherent unreliability of emission reduction certificates in developing countries.

### **Emissions in Australia will rise**

Quite apart from these questions of unreliability, this loophole could be very bad for Australia in the long-run. What it means is that actual Australian emissions (as distinct from those counted under the ETS as net global emissions) will not fall, but will rise significantly by 2020. If business-as-usual emissions would have risen by 20% by 2020, but the target is a 5% fall (taking the 5% as an example), a 70% direction of abatement action overseas would mean that our domestic controlled emissions would actually be 12.5% higher. With the 15% target, our actual emissions would be 9.5% higher than now.

### **No transformation in Australia**

As noted above, this means that the transformation of the Australian economy to lower emissions will not occur. Not only will Australia be disadvantaged by the financial outflows from buying overseas permits and certificates, but it will therefore miss out on the technological development essential to lower emissions in the longer term. Australia will be even further up the one-way street of high emission technology and industries, contributing less in reality (through the cheap opt-out of low cost, questionable overseas permits) to reducing global emissions.

Once this non-reduction of Australian emissions through the ETS becomes known to the public, there will be huge disillusionment. Also, buying dodgy offset credits will simply amount to a pointless financial burden on emitting Australian entities, rather like a low carbon tax paid to a foreign country.

### **Double-counting and global inconsistency**

There is also large scope for global double-counting, although the technical experts will claim that the global emissions accounting scheme will prevent this. In reality, in the court of public opinion and in the political negotiation process, two conflicting claims will be made. Emission reductions bought overseas will be claimed by Australia as being a global reduction which can be offset against Australia's actual higher emissions, and it will claim the net, lower target. But at the same time countries where reductions happen, financed in this way, will say: forget who's funding it, it's a real reduction in our country - and claim credit for that.

The ETS scheme is also inconsistent in principle by allowing unlimited buying of overseas permits, while prohibiting the export of Australian permits. While paying lip-service to achieving the most globally-efficient ways of reducing emissions, it is excluding Australia from contributing to this as regards entities outside Australia, and is biasing the system in Australia towards permit prices only being lower in Australia, but never being higher, because of global permit trading.

### **LACK OF RECOGNITION OF VOLUNTARY ACTIONS**

A major weakness, which can be fixed, in the ETS is the fact that voluntary actions which lead to reductions in controlled emissions (such as households or organisations putting in solar hot water systems or building insulation that reduce electricity demand, or people driving their cars less to use less petrol) will lead to no net reduction in emissions.

This is because their actions will simply lessen the permits needed by electricity generators, or petrol suppliers. These freed-up permits will go onto the market, within the predetermined limits for permits set by the predetermined targets, and lower the price for permits, which will enable other emissions, to the extent of the freed-up permits. In other words, with predetermined targets, the ETS has a set ceiling on controlled emissions which is the same as a set floor for emissions.

### **Serious undermining of technological change**

This flaw in the ETS could have a very serious detrimental effect on the large market for voluntary actions to lower emissions. There is a substantial industry in Australia providing emission reduction services to households, small businesses, local and state government bodies, and other organisations, where the motive for these bodies is not financial but a wish to personally contribute to a reduction in Australia's emissions. When the understanding arrives that their actions will do nothing to lower net emissions, there will be disillusionment and disgust on a large scale. This must seriously undermine the significant and growing industry which is in the process of developing experience in the deployment of new technologies which are important in the long run for Australia's shift to sustainability. Members of some organisations may well still want to proceed with reducing emissions but, as such steps cost money, the way is open for denialist or cynical decision-makers to block actions with the mocking cry 'it won't make the slightest difference and is a complete waste of money'.

### **Ways this flaw can be removed**

This major flaw in the ETS can be easily fixed, in several alternative ways. First, voluntary emission reductions could be taken into account in a broad-brush way by the government just making a general estimate of the effect of voluntary reductions, using various sources of information or estimates. It could then lower the target progressively, to the extent of this estimate. Even this broad-brush approach would

be sufficient to assure people their efforts count and keep the industry going.

A second approach would be more precise, involving the choosing of a specific range of measures which are more easily measured, such as solar hot water systems installed, building insulation measures under specified programs, or the purchase of particularly fuel efficient cars or appliances. This approach would probably result in a lower figure for emissions reduced, but arguably more reliable, for tightening the emissions target accordingly, to take voluntary efforts into account.

A third approach, a variant of the second, would be to pay a financial benefit to those participating in these specified emission reduction activities. The benefit would not necessarily represent either a market value for the emissions avoided over the years by the activity, nor a benefit sufficient to make the activity a 'no-regrets' or profitable exercise. Just an element of subsidy of the cost would serve to encourage further activity of this kind, and encourage reporting of qualifying activity.

A tightening of the target to take into account voluntary activity would be a possibly small, but invaluable, addition to the ETS. It would not undermine in any way the broad thrust of the scheme, but would be vital in maintaining public morale and the growing industry meeting the demand for voluntary actions.

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