

October 2006: Australian Democrats: Senator Andrew Murray

Greenhouse Gas Emissions Discussion Paper Carbon Tax and Emissions Trading

Executive Summary

This Discussion Paper is intended to summarise the arguments surrounding carbon taxes and emissions trading schemes, so that an informed decision can be taken on these matters by the Australian Democrats. This Paper provides an introduction to both instruments. Feedback is welcomed.

It is no longer possible to ignore the ever increasing volumes of greenhouse gas emissions, and the part those emissions are playing in global warming. The current consensus is that together with alternate energy schemes, and stronger regulation, either carbon taxes or emissions trading schemes (both economic instruments) are the only worthwhile and effective market-based options available for policy makers.

Section One contains a brief introduction to Australia's current greenhouse gas emissions situation, and our policy response (or lack thereof). **Section Two** compares and contrasts both carbon taxes (section 2.1) and emissions trading schemes (section 2.2), providing the reader with an introduction to the basic theory underlying each instrument. **Section Three** discusses design and implementation issues attached with both carbon taxes and emissions trading schemes. Although they are generally considered the most appropriate policy response to greenhouse gas emissions, this in no way implies that they are particularly easy to implement. As section three shows, there are many elements which have to be considered when implementing either a carbon tax or an emissions trading scheme. **Section Four** looks at what is going on in Australia at the moment. On the whole, the Howard Government has been unwilling to take any serious steps towards addressing greenhouse gas emissions. The States seem more serious, but their 'National Emissions Trading Scheme' has also suffered some serious setbacks. Peak industry and business groups are increasingly voicing their concern that something needs to be done. Finally, **Section Five** concludes the paper by touching upon the problem of standing alone, and making some other final remarks.

Greenhouse Gas Emissions Policy Response Discussion Paper

1. Introduction

1.1 Australia's Position

Although somewhat contentious in the past, it is now commonly accepted that the emission of greenhouse gases (in particular carbon dioxide) by humans is having a noticeable impact upon the global climate. In a bid to stem greenhouse gas (GHG) emissions the 1997 Kyoto Protocol to the 1992 United Nations Framework Convention on Climate Change establishes legally-binding caps on the emissions of greenhouse gases. However, when it entered into force in 2005, Australia did not ratify the Protocol. Along with the United States, Australia was the only other developed nation not to sign the treaty, claiming it would be detrimental to the economy.¹

Australia's Liberal/National Government has repeatedly argued that ratification of the Protocol will put Australia at a competitive disadvantage against other countries who have not committed to GHG reductions, as well as suffering the effects of investment and emissions intensive industries moving offshore.² However, it is no longer the case that global climate changes and emissions production can be ignored.

According to the Australian Conservation Foundation Australia is "one of the world's top twenty emitters, with pollution levels comparable to France, South Africa and Mexico."³ Against this others argue that our contribution is small. While this is true on the global scale, when Australia is contrasted with the United States, China or India, as world citizens it does not make us any less culpable or responsible.

When viewed on an emissions per capita basis, we are in fact one the highest emitters, well above the developed country average. We consume ten times more energy per

¹ Kerin, 2006, 28

² Saddler et al, 2006, 1

³ ACF, *Australia's Inconvenient Truth*

capita than the average Indian, five times more than the average Chinese, and fifty percent more than the average European.⁴

In 2004 Australia's total greenhouse gas emissions totalled 564.7 million tonnes of carbon dioxide equivalent, or 28.2 tonnes of carbon dioxide equivalent per person.⁵ On a sectoral breakdown, approximately, energy (including stationary energy production, transport and fugitive emissions) accounts for 68.5 percent, industrial processes 5.3 percent, agriculture 16.5 percent, land use (including deforestation and land change) 6.3 percent and waste 3.4 percent.⁶

1.2 Possible Policy Response

If Australia is to be serious about lowering emissions levels then we need to get serious about our policy responses. The current wisdom suggests that market-based (economic) measures are better (more efficient) in achieving their goals than a regulatory based framework. The key market-based policy responses proposed to assist Australia are carbon tax and emissions trading.

Australia's current stance towards emissions reductions is uncoordinated and almost non-existent. At a Federal level the Howard government has consistently refused to consider such issues, instead choosing to focus on investing in low-carbon technology, and the possibility of carbon capture and storage (geosequestration). At a state level a 'national emissions trading scheme' has been developed, but has been met with strong criticism from the Federal government, as well as some disagreement amongst the states themselves.

However, in a House of Representatives Standing Committee on Science and Innovation Inquiry into Geosequestration Technology (House of Representatives Committee) currently being conducted, a number of submissions made were of the opinion that in order for Australia to effectively deal with its greenhouse emissions

⁴ ACF, *Australia's Inconvenient Truth*

⁵ *National Greenhouse Gas Inventory 2004*, 1

⁶ *National Greenhouse Gas Inventory 2004*, 4

problem, some sort of price needs to be placed on pollution.⁷ In effect this means implementing either a CT or an ETS.

Consistent with this was a comment by the Allen Consulting Group in a report to the Business Roundtable on Climate Change that “ultimately it is difficult to escape the need to introduce a signal into the market that effectively imposes a price on greenhouse gas emissions.”⁸ They went on to state that “we can design and implement the most innovative supply side measures in the world to provide incentives...but unless these processes are cheaper than existing system, no rational investor will deploy them in the absence of a carbon signal.”⁹

2. Possible Instruments

The effects of global warming are likely to impact upon both society and the natural environment. Low lying lands may become submerged, biodiversity may decline and climate zones may shift (impacting on water supplies and crop yields). Human and animal migration may occur, placing upward pressures on the lands to which they move. It is now generally accepted that greenhouse gas emissions and global warming are, at least partially, interdependent.

History and experience suggest that a system of purely regulatory or command and control system are not ‘best practice’. Insights and studies from economics have shown that the ‘way of the future’ lies with introducing an element of economic incentive to prompt shifts in behaviour. Market-based mechanisms are generally considered superior due to the fact that command and control approaches tend to lack flexibility and often worsen the cost of controlling emissions.¹⁰

Economic incentives, on the other hand, are more flexible. They focus on the cost of pollution and leave the polluters free to choose their own course of action in response to the rising costs that they are faced with.¹¹ Economic incentives have a degree of

⁷ Taylor, L, 2006, 26

⁸ The Allen Consulting Group, 2006s, 54

⁹ The Allen Consulting Group, 2006, 54

¹⁰ Kahn & Franceschi, 2006, 781

¹¹ Kahn & Franceschi, 2006, 781

inherent incentive to lower emissions in that they burden polluters with the cost of polluting. The lower their pollution, the lower their costs. This characteristic can stimulate efficiency gains in the economy, along with environmental gains.

Although both CT and ETS are economic instruments, their fundamental goals are to achieve desirable social and environmental objectives, although there may be some associated economic effects.

A key aspect of introducing a price signal on carbon (ie forcing someone to pay for pollution) is to internalise the externality associated with greenhouse gas emissions. At the moment most polluters (i.e. the people who control the magnitude of the problem) are not made to bear the total cost of their actions. No-one is really paying for the costs of their emissions. By introducing a carbon tax this negative externality can be internalised and the greater social costs of GHG emissions can be paid for by those causing them.¹² It is a serious concern that at present the only people liable to pay for our current actions with regard to GHG emissions are future generations who are either too young to have impact upon current policy directions or are not yet even born!

2.1 Carbon Tax

A carbon tax is the taxation of energy according to its carbon content.¹³ A CT may be purely applied to those fuels which contain carbon (i.e. fossil fuels) or can be a more broadly based tax that includes a carbon component (a more broadly based carbon/energy tax has the advantage that it can be applied to non-carbon energy sources).¹⁴

The main objective of a CT is in forcing firms and households to reduce their reliance on fossil fuels and shift their consumption towards less-carbon intensive fuels, preferably renewable energy resourced.¹⁵ By precipitating a significant shift in

¹² Tietenberg, 2004, 300-301

¹³ Ekins & Barker, 2001, 326

¹⁴ Saddler et al, 2006, 4

¹⁵ Jorgenson et al, 1992, 393

carbon-intensive fuel use, a CT can be used to achieve a substantial reduction in greenhouse gas emissions.

Part of the appeal of a CT lies in the fact that the concept seems to have the hallmarks of good taxation. First, it is designed to deal with an accepted economic problem (that problem being the negative externality caused by greenhouse gas emissions). Second, revenues can be expected to grow with income (because energy demand tends to rise with income). Third, the expectations of CT are that they normally stimulate energy savings, innovation and increased efficiency in resource use, all of which may stimulate economic growth. Fourth, regressive elements of the tax should be small enough such that compensation (derived from the expected revenues of the tax) can be awarded to those groups that are disadvantaged. Finally, there is the possibility that existing tax structures can be used in its administration or implementation.¹⁶

In addition to its apparent satisfaction as being a 'good tax', there are also a number of other advantages. As an environmental tax a CT does not have the same distortive effect on incentives that other taxes do. Although the best outcome for a carbon tax is to raise diminishing amounts of revenue (thereby signalling a move towards new technology, lower use of carbon resources, etc), any revenue that is raised can be used by the government to finance reductions in other incentive-distorting taxes (eg. income tax, corporate tax) or other expenditure agendas.

Further, carbon taxes can encourage increased dynamic efficiency in the economy. Because a tax is always present, a CT acts as an incentive to adopt ever cleaner and more efficient technologies. A CT provides a continual upward standard to which polluters can aspire to (because there is an economic incentive to do so). A carbon tax also has the advantage that it can be easily modified and adjusted as circumstances change, unlike regulations and rules which can be rigid and harder to change.¹⁷

However, a CT is not without downsides. The most immediate concern commonly voiced is that in the short-term, it raises the cost of an essential good, energy. The

¹⁶ Ekins & Barker, 2001, 327

¹⁷ Pearce, 1991, 942

costs are immediate and tangible, the benefits longer-term and dispersed. A major concern for policy makers is that a CT can not absolutely guarantee that a certain levels of emissions will be achieved. This is due to the fact that the actual processes of reducing emissions are largely left in the hands of the polluters. If they feel it is not worth their while to lower emissions (which seems unlikely) then they won't.

A second concern with carbon taxes is the imposition of a deadweight loss on the economy, which would then have to be offset against any gains from the reduction of the negative externality associated with a reduction in greenhouse gas emissions. However, when revenues raised from the carbon tax are used to reduce a distortionary tax, there may even be positive gains.¹⁸

There is also a concern about the fact that a CT has a regressive nature owing to the fact that lower income households normally spend a higher proportion of their income on fuel than higher income families.¹⁹

2.2 Emissions Trading Schemes

ETS are an alternative economic instrument to a CT, which can also be used to lower GHG emissions. CT and ETS are not necessarily mutually exclusive, though it does seem the norm to talk in terms of one or the other. Used since the 1970s to combat environmental problems such as water and fisheries management, ETS have been considered as a possible policy response to greenhouse gas emissions since the early 1990s.²⁰

Such a scheme involves establishing a system of permits, the number of which is worked out once the relevant regulatory body has determined what the reduction target is to be. The most commonly suggested type is the 'cap and trade' system, whereby an acceptable emissions level is set by a regulatory authority and a number of permits allowing the appropriate amount of pollution are released.²¹ These permits are then awarded via either an auction or on an allocative basis according to

¹⁸ Zhang & Baranzini, 2004, 509

¹⁹ Pearce, 1991, 943

²⁰ Philibert & Reinaud, 2004, 8

²¹ Saddler et al, 2006, 4

historical emissions levels for that industry (sometimes called a ‘grandfathering system’). Once distributed, permits can be bought and sold in a market, allowing them to flow to those who value them the most.²²

The main difference in whether or not permits are allocated or auctioned lies not in their result (which in theory should be the same), but in their distribution. In an auction system, the government is transferring resources from themselves to pollution emitters, and receiving revenue in exchange (which can then be used in similar ways as revenues raised from carbon taxes, as discussed above). Grandfathering of permits results in emitters gaining title over a tradeable asset or property right, with no financial windfall for the government.²³

The arguments in favour of auctioning are that governments are able to use revenues raised to decrease other distortionary taxes in the economy, auctions spread the costs of carbon control across participants, and fair access is given to everyone, without disputes and contests over allocation. The arguments in favour of grandfathering of permits are that such allocation honours the ‘social contract’ with producers that they undertook investment on the basis of not being charged for pollution.²⁴

The main contrast with carbon taxes relates to price/quantity adjustment. Under a carbon tax, the price is fixed and the quantity varies. Under emissions trading, a fixed quantity of emissions is permitted and the price then adjusts accordingly.²⁵

2.3 Emissions Trading or Carbon Tax?

Carbon taxes and emissions trading schemes are two solutions to the same problem. Both come with their own advantages and disadvantages, and each have their own merits (as outlined above). So, which instrument is preferable?

²² Alden, 1995, 137-38

²³ Ekins & Baker, 2001, 330

²⁴ Ekins & Baker, 2001, 330

²⁵ Ekins & Baker, 2001, 330

The most common argument put forward is that ETS don't have the dead-weight loss associated with a CT, and are therefore preferable. However, there are in fact quite a few arguments that can be made in favour of each.

In addition to the positive features of a CT outlined above at section 2.2, another advantage of a CT over an ETS is the creation of a never-ending incentive scheme that is inherently part of a CT. Because a CT is ever-present (or at least, present until it is removed), there is an incentive for ever increasing technological innovation and efficiency gains. In a 'cap and trade' type system technological innovation will reduce the price of the permit but not emissions levels themselves.²⁶

A further advantage of a CT over an ETS is that a carbon tax is able to catch both 'big' polluters and 'small' polluters. Under an emissions trading scheme it is rather difficult to capture 'minor' polluters such as families, taxi drivers and car owners due to the transaction costs and difficulties of implementing a system designed to target so many individual and specific polluters. However, these polluters do need to be targeted because a reduction in 'domestic' emissions is an important part of any attempt to reduce greenhouse gas emissions.²⁷

However, carbon taxes ultimately have a rather large uncertainty component due to the fact that if GHG producers are willing to pay the tax, then emissions will not necessarily be reduced. An ETS on the other hand, provides certainty: a target quantity for GHG emissions is established, and producers must adjust accordingly. The market forces of supply and demand will determine what the most viable option for producers to pursue is.

A second (potential) advantage of an ETS is their appeal to private companies. Apart from the initial transfer of resources from private sectors to the government when the permits are first released, in the market trading of permits in future time periods, the resources will be transferred between private entities.²⁸

²⁶ Kahn & Franceschi, 2006, 781

²⁷ Kahn & Franceschi, 2006, 782

²⁸ Baumert, 1998

Further, an ETS has the advantage that permit prices adjust automatically for inflation and external price shocks, whilst adjustments in CT would require government intervention whenever required.²⁹

The question of which is preferable is a difficult one to answer. It is not necessarily a question of which one is better or worse, but which one suits the context better. As mentioned previously, it is not the case that these two instruments are mutually exclusive. In their report to the Australian Business Roundtable on Climate Change (a group consisting of BP Australia, Insurance Australia Group, Origin Energy, Swiss Re, Visy Industries, Westpac and the Australian Conservation Foundation) ('Business Roundtable'), the Allen Consulting Group suggested a two-phase approach, with a CT in the beginning and a gradual transition to an ETS.³⁰

3. Design and Implementation Issues

As with any important policy response, the formulation is of critical concern. Formulating an appropriate policy response to a problem as difficult and large as greenhouse gas emissions is very complex and inevitably there are many questions to be asked and issues to be discussed. This section attempts to address at least some of the questions surrounding the design and implementation of a possible policy response.

Owing to their different approaches, both CT and ETS have basic themes unique to their own implementation and construction.

3.1 Implementation and Design of a Carbon Tax

Zhang and Baranzini (2004) identify three issues considered important when designing a domestic carbon tax:

- the treatment of carbon tax revenues;
- the impacts on distribution of income; and

²⁹ Baumert, 1998

³⁰ The Allen Consulting Group, 2006, 54

- the effects on international competitiveness.³¹

3.1.1 Treatment of Carbon Tax Revenues

An important aspect of a CT is the so-called ‘double dividend’ feature. Not only is there an environmental dividend (reduced emissions) but also a revenue dividend (increased government revenues).³²

Part of any CT policy would be the way in which the fiscal revenues are redistributed (sometimes referred to as ‘revenue recycling’ in the literature). Fiscal revenues may be used to decrease other taxes so that the government’s budgetary position is unchanged and the overall tax burden remains the same. The revenues are used to shift taxation from economic ‘goods’ (work, income, property) to economic ‘bads’ (such as pollution). Alternatively, revenues can be ‘earmarked’ and allocated in advance to finance specific environmental programs. Thirdly, fiscal revenues can be used to compensate those most affected by the tax. For example, subsidies could be given to companies for introducing lower emissions technology, thereby compensating them for the increased cost of production.³³

3.1.2 Distributive Implications of a Carbon Tax

As a tax, there will be income-distributive effects associated with the implementation of a carbon tax. These distributive impacts represent a key factor in determining a carbon tax’s acceptability.

As noted previously, there is a regressive element to a carbon tax, although it is thought to be relatively weak. Nonetheless, it is an argument that is strongly used in opposition to the introduction of a carbon tax, not least because of public perceptions about taxes. Thus, if public support is to be secured, potential regressive impacts warrant political consideration of ways to mitigate any regressive impacts.³⁴

³¹ Zhang & Baranzini, 2004, 509

³² Zhang & Baranzini, 2004, 509-10

³³ Baranzini et al, 2000, 400

³⁴ Zhang & Baranzini, 2004, 511

There are a number of policies that could be used to counter any regressive impacts. A tax-free allowance of essential energy could be established for domestic consumption. Above this ‘floor’ energy could be taxed progressively, thereby still providing an incentive to lower energy consumption. Carbon tax revenues can be re-distributed by way of lump-sum payments to lower income households. Alternatively, the revenues raised could be used to compensate lower income households in other ways: lowering income tax rates or changing the social welfare system.

Results from empirical studies about the regressive nature of a carbon tax have generally showed that the regressive impacts of a carbon tax are much smaller than expected.³⁵ Further, any regressive impacts can be dealt with by using policies such as those mentioned in the proceeding paragraph.

3.1.3 International Competitiveness

The current Coalition Government has often argued that the introduction of a carbon tax within Australia would impact upon our international competitiveness, thereby reducing the ability of our firms to sell their goods and services in both domestic and world markets. The logic behind this argument is quite simple: taxes on business inputs add to business costs, thereby raising the costs of production of that business, and reducing their competitiveness.³⁶

The extension of this line of reasoning is that those sectors which are more energy-intensive (and hence produce more emissions) are likely to face a larger rise in costs of production relative to those sectors which are less energy-intensive, and will be more uncompetitive in the short-term.³⁷

In the Australian context the heavy reliance on fossil fuels in production processes means that a carbon tax will increase costs of production of those goods that use energy (or energy-intensive) materials in their production. This could lead to possible

³⁵ Baranzini et al, 2000, 409

³⁶ Ekins & Barker, 2001, 349

³⁷ Zhang & Baranzini, 2004, 512

negative impacts on producers who have to compete in export markets against market participants who aren't burdened with a carbon tax, and on producers in the domestic market who compete against imports coming from producers not similarly burdened.³⁸

A change in competitiveness may affect the economy's consumption patterns as consumers substitute one good with another (where possible) because of price differences (for example, there maybe a shift towards timber rather than steel in household construction).

It is likely that sectors such as LNG, aluminium, alumina and steel (which are both energy-intensive and export oriented) become more exposed than others.³⁹

Empirical studies from other countries which have introduced carbon taxes, however, seem to show that competitive losses are not significant.⁴⁰ Disproving the hypothesis that Australian industries and producers will suffer excessive losses due to a decline in competitiveness (as the current Australian Government often suggests) would be a key step in the successful implementation of a carbon tax in Australia.

3.1.4 Other Issues?

As well as the considerations mentioned above, there are a number of other issues to consider.

In terms of the legal context for introducing a carbon tax, the Australian Government would be able to do so under section 51(ii) of the Australian Constitution, which gives the Commonwealth the power to charge excise and customs duties.

The time frame for the introduction of a carbon tax would also be a crucial element. Too fast an introduction or too high a tax could lead to negative economic shocks and

³⁸ Saddler et al, 2006, 8

³⁹ Saddler et al, 2006, 26

⁴⁰ Baranzini et al, 2000, 409

disturbances. If it is too slow an introduction then emissions reductions may take longer to achieve.

There is also the question of public opinion and acceptance. At the moment, the Australian Government do not seem (on the whole) to be particularly concerned with Australia's greenhouse gas emissions policy or stance. This is probably also an accurate reflection of how the majority of the Australian public feels. This could change. The success of introducing and implementing a carbon tax will be strongly dependent upon both political strength and commitment to the idea, and also to the public acceptance.

For example, it would be important to address the fact that the tax will not be paid in the same way as say, income tax. Rather, it would be paid (like GST) via the increased price of goods. Flowing on from this would be the necessity of discussion of the use of carbon tax revenues.

In addition to public 'family' concerns, there would no doubt also be strong concerns originating with industry and those sectors that are heavily reliant on fossil fuels. Consultation with the affected parties and keeping them fully informed would be crucial in the implementation of a CT.

There are also a number of design issues relating to the on-going implementation of a carbon tax. For example, in the presence of inflation, the tax will need to be indexed so as to not lose real value over time.⁴¹ The structure of the tax will also need to allow for new polluters entering into the market.⁴²

3.2 Design and Implementation of an Emissions Trading Scheme

When designing an ETS there are a number of important design aspects which need to be considered, including: coverage, upstream and downstream allocation, initial allocation method, the scheme cap, banking and borrowing, and penalties.

⁴¹ Baranzini et al, 2000, 406

⁴² Baranzini et al, 2000, 406

3.2.1 Coverage

Philibert and Reinaud (2004) contend that the effectiveness of a trading scheme in achieving least-cost abatement will be heavily dependent on the coverage of the scheme. The term ‘coverage’ refers to both the sources of emissions, categories of emitters and types of emissions as well. The greater the coverage, the greater the potential for liquidity and market efficiency, as well as a lower cost of compliance.

3.2.2 Allocation of Permits

The question of allocation in an ETS is actually a two-part question. Firstly, there is the question of where the overall limit in the scheme should be applied at in the production/consumption chain. Second, there is the question of how permits should be allocated.

The point of application of the overall limit is often referred to as either being ‘upstream’ allocation or ‘downstream’ allocation, and will assist in determining market participants.⁴³ In an upstream allocation it is normally the entities responsible for producing and importing fossil fuel that are held accountable for meeting the cap. A downstream design targets the end-users of fossil fuel energy – those that actually emit the greenhouse gas emissions.⁴⁴ Upstream allocation has the advantage that it increases coverage to most sources, and that this broad coverage in turn ensures administrative effectiveness and policy certainty.⁴⁵ Downstream allocation would also result in a large number of participants, so much so that it may become impractical if it is to include small businesses and domestic households. However, by involving more sources it may also bring greater cost savings to the system.⁴⁶

The method of initial allocation is a distinct process, and has already been discussed previously (see under section 2.2), but will also be touched upon here. Allocation by auction allows for dividend recycling and the possibility for the government to lower other distortionary taxes. Allocation via auction also allows the government to avoid

⁴³ Philibert & Reinaud, 2004, 23

⁴⁴ Philibert & Reinaud, 2004, 23

⁴⁵ Philibert & Reinaud, 2004, 23

⁴⁶ Philibert & Reinaud, 2004, 23

the difficult problem of source-by-source allocation: instead, each source can decide for itself how many allowances it needs, and purchase the corresponding number of permits, with the price being determined by the market.⁴⁷ Grandfathering of permits results in distribution which is free of charge (and thus does not result in any revenue function for the government) but is sometimes necessary to raise political support amongst key parties.⁴⁸

3.2.3 The Scheme Cap

The scheme cap is the limit on the number of tonnes of greenhouse gas emissions that could be emitted by the covered participants. Due to the fact that the ETS is a quantity-controlling mechanism, this is a fundamental design issue.

In setting the scheme cap, the National Emissions Trading Taskforce identified a number of points which it felt were important to consider. Firstly, the scheme cap needs to be consistent with a long-term reduction target, and that the cap needs to be appropriately set up so as to allow a smooth transition which would minimise short and medium term costs whilst also ensuring that sectors could handle larger reductions into the long-term. The cap also needs to be flexible and respond to new information relating to greenhouse gas emissions. The realities of the markets which it seeks to impact also need to be considered, and a corresponding timeline established: for example, the energy market is characterised by long-term investments.⁴⁹

3.2.4 Banking and Borrowing

Emissions vary from year to year, due in part to the fact that economic activity is cyclical. Similarly, costs of emissions abatement also vary over time periods. To get around these obstacles an ETS may incorporate banking and borrowing of emissions allowances (ie permits).

⁴⁷ Philibert & Reinaud, 2004, 24

⁴⁸ Philibert & Reinaud, 2004, 25

⁴⁹ NETT, 2006, xvi-xvii

Banking of allowances enable allowances not used in the trading period for which they are issued to be ‘banked’ for use in a later period.⁵⁰ Banking allows firms greater flexibility in achieving emissions reductions across time periods, and can also help smooth their emissions output over the course of the business cycle.⁵¹

Borrowing of allowances enables parties to bring forward allowances from future trading periods so as to meet compliance targets in current periods.⁵² Similar to banking, borrowing also allows flexibility over time. However, with borrowing comes the concern that companies who borrow one trading period will be unable to re-pay the borrowed allowances, and thus not comply with the cap.⁵³ This then raises the possibility of possible negotiations to adjust the scheme cap, which would weaken the environmental effectiveness of the ETS.

3.2.5 Other Issues

In addition to the design aspect discussed above, there are some other aspects which merit noting.

In designing an ETS, the creators have choices between absolute targets or relative targets. Absolute targets are usually expressed as total emissions during a specified period. Relative (or rate-based) targets are usually expressed as an emissions rate per unit of output or activity (for example, energy consumption).⁵⁴

A cost-effective emissions trading scheme needs an effective market place. A market that has high transaction costs and market failures may reduce the cost-effectiveness of the ETS. The market needs a sufficient degree of liquidity and to involve enough players to make the ETS work.⁵⁵

There are also the possible impacts on competitiveness and leakage. By introducing emissions trading, and placing a price signal on carbon, emissions intensive industries

⁵⁰ Philibert & Reinaud, 2004, 26

⁵¹ Philibert & Reinaud, 2004, 26

⁵² NETT, 2006, 52

⁵³ NETT, 2006, 52

⁵⁴ Philibert & Reinaud, 2004, 26

⁵⁵ Philibert & Reinaud, 2004, 19 – 20

may experience a decline in competitiveness due to increased costs in production (arising from abatement costs). In an international context, this may damage those industries export competitiveness. Additionally, it may lead to leakage. 'Leakage' is used to describe a situation in which a carbon-intensive industry decides to relocate its activities to another country where it will not be faced by the same emissions constraints.⁵⁶

4. What is going on in Australia?

Given that Australia has many carbon-intensive industries, and is a high GHG emissions producer on a per-capita basis, what are our GHG policy responses currently in place? The short answer, is none.

The government has yet to get serious about introducing appropriate (market-based) policy responses and have so far held onto the notion that investing in low-emissions technology is the way forward. However, this position is untenable. Submissions and inquiries by the House of Representatives Committee revealed to the government that without economic incentives, then there will be little behavioural shifts amongst Australian GHG emissions producers.⁵⁷

In their submission to the House of Representatives Committee, Santos (a major oil and gas company) commented that “the successful commercial application of geosequestration requires justification on economic grounds. In this respect a range of economic enablers may be employed to promote geosequestration activities, including carbon pricing...” Their submission goes on to state that “in order to meet long term objectives of reducing global greenhouse gas emissions it is necessary to place a cost on high volume emitters of carbon dioxide.”⁵⁸ The *Australian Financial Review* reported that the Energy Supply Association of Australia, the Australian Coal Association and Stanwell Corp also all called for a price signal to be introduced.⁵⁹

⁵⁶ Philibert & Reinaud, 2004, 22

⁵⁷ Taylor, 2006, 26

⁵⁸ Santos, Submission to House of Reprs Committee, 2

⁵⁹ Taylor, 2006, 26

Whilst the government has been rather unwilling to become proactive in the area, this has not stopped a number of other parties from getting involved in the debate about what to do in response to GHG emissions. Perhaps the largest body that has dominated the debate has been the National Emissions Trading Taskforce (NETT). The NETT is a collaborative effort between the State and Territory governments devoted towards developing and implementing a national emissions trading scheme. In August this year (2006) they released a large discussion paper, containing their proposal, which received considerable media coverage.

In “Possible Design for a National Greenhouse Gas Emissions Trading Scheme”, the NETT provide a comprehensive and detailed plan of what they see as being the way forward – the introduction of a national ETS. Their lengthy discussion paper covers all aspects of an ETS, along with the modelling of certain scenarios, and is quite a persuasive document. However, within days of its release, Queensland and Western Australia were already refusing to support its implementation.⁶⁰ The Prime Minister was reported as having attacked the idea on the basis that it would raise petrol and electricity prices.⁶¹ The NETT will receive public submissions on their paper until late in December this year.

Additionally, a number of peak industry and business groups are calling for action. For example, the Business Roundtable also released a report in April this year calling on the Federal government to take early action in addressing GHG emissions. Their report contains a number of recommendations including the introduction of a “national market-based carbon pricing mechanism to deliver cost-effective emission reductions.”⁶²

In addition to their own report, the Business Roundtable also commissioned the Allen Consulting group to write a report. The Allen Consulting Groups’ paper *Deep Cuts in Greenhouse Gas Emissions – Economic, Social and Environmental Impacts for Australia*, examines “...the likely impacts on the Australian economy and community of taking significant policy action to bring about deep cuts in greenhouse gas

⁶⁰ Scott, 2006, 5

⁶¹ Scott, 2006a, 4

⁶² Business Roundtable, 2006, 7

emissions by 2050.”⁶³ Included in the report is the conclusion that “ultimately it is difficult to escape the need to introduce a signal into the market that effectively imposes a price on greenhouse gas emissions. We can design and implement the most innovative supply side measures in the world...but unless these processes are cheaper than existing systems, no rational investor will deploy them in the absence of a carbon signal.”⁶⁴

5. Conclusion

5.1 The Problem of Standing Alone

Australia is well suited to either an emissions trading scheme or a carbon tax or both because it is a sophisticated market economy, and has a highly developed legal and political system, which is corruption free and politically stable. The real difficulty lies in gaining widespread political, public and industry support. In general, people do not like to hear that they will be burdened with a new tax, or higher cost of electricity, especially when they are accustomed to having paid low prices for such a long time. However, as the *Australian Financial Review* reported in August this year, a number of energy experts suggest that the time for cheap power has come to an end.⁶⁵

Beyond public and political acceptance however, lies the problem of standing alone. Greenhouse gas emissions are a global problem, and its impacts are not confined within the borders of the country from which they are emitted. For Australia the ‘first mover problem’ has often been touted as a major obstacle. The problem in acting first, and in a stand alone fashion, is that our economy will suffer the most. Carbon-intensive industries will close down their operations and re-locate them outside of Australia in countries where they do not face the operating constraints of a carbon price. This was discussed above at section 3.1.3 with reference to a CT but it also applicable to an ETS. Both instruments are based on introducing a carbon price, which would impact upon a carbon-intensive industry’s competitiveness.

⁶³ The Allen Consulting Group, 2006, v

⁶⁴ The Allen Consulting Group, 2006, 54

⁶⁵ Minchin, 2006, 9

The problem of standing alone is a very real barrier to implementing an effective greenhouse gas emissions policy response. As noted previously, in their report to the Business Roundtable, the Allen Consulting Group comment that unilateral action will have next to no global impact, and may just result in damaging the economic well being of Australia.⁶⁶ Without a concerted global effort (especially one that involves the United States, China and India) it would be very difficult to take any substantial action against global greenhouse gas emissions, or achieve any serious outcomes.⁶⁷

5.2 Final Remarks

Australia's current stance towards emissions reductions is uncoordinated and almost non-existent. The introduction of a carbon price would provide Australia with the opportunity to both address a serious environmental (and to a degree, economic) problem domestically, as well as being able to act as an agent for change within the region, and show our genuine support and commitment to reducing greenhouse gas emissions. While global warming may be a slow process we do not have that much time to act and implement an appropriate, worthwhile and effective policy response.

Australia is in the fortunate position of being able to study and analyse what other countries have done, how they have formulated their greenhouse gas emissions policies, and what the impacts have been. In theory, Australia should be able to take advantage of our position and gain an insight and understanding into the practical application of a carbon tax or emissions trading scheme. A number of European countries in particular have practical experience of both types of policy response. (Of course the extent of such a comparative exercise would be limited by the 'uniqueness' of each country's situation.)

An important part of developing a GHG emissions policy response is noting that a carbon tax or emissions trading scheme cannot properly function as a stand-alone policy. In order for the response to be as effective as possible it needs to be introduced as part of a greater policy 'tool kit'. Other policy responses may include:

⁶⁶ The Allen Consulting Group, 2006, 54

⁶⁷ Gittins, 2006, 15

public funding of research into cleaner production techniques or renewable energy resources; tax concessions to those private firms undertaking research and development on renewable energy and emissions reduction; and implementation of energy efficiency standards.⁶⁸

So, where does all this leave the Democrats? Firstly, the Democrats have always recognised the global and international nature of the GHG problem, and have consistently argued that Australia should co-operate with and be part of international agreements, such as the Kyoto Protocol.

Domestically, the Democrats will support any state or national initiative that effectively addresses GHG. With regard to CT and ETS, given the climate of federal political resistance at present, to suggest that Australia take unilateral action may ultimately be self-defeating, but not if any Democrat carbon price policy also proposes that Australia simultaneously argues for regional action (perhaps via APEC or some other regional body), and that there needs to be some system in place for all countries within the region.

This year, there have been a number of Democrats media releases highlighting the need for the introduction of a carbon price signal. However, a decision as to what a full GHG policy response should actually consist of is yet to be made. The question of whether a CT or an ETS or both should be used is a very difficult question to answer, and is the concern of much academic debate, and some business and political debate.

The reality is that some sort of hybrid model, combining both a CT and ETS may be the best way forward into the future, and that this will be most effective if adopted by a number of countries, (it could prove fatal to insist that a universal international CT be first agreed on). At this stage it is not so much the actual final policy response that is important, as the need for the urgent formulation of *an effective* full policy response.

⁶⁸ Saddler et al, 2006, 7

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