Minority Report by Senator Nick Xenophon

Background: nature of the problem that we are trying to solve

1.1 Anthropogenic climate change presents us with the most pressing and complex policy problem that we have faced. It is pressing because the window of opportunity in which we have to take the sort of abatement action needed to avoid irreversible, dangerous and potentially catastrophic climate change is small; and, on the basis of the findings from the March 2009 conference in Copenhagen, is getting smaller. It is complex because it has all the features that policy, whether at a global or national level, usually struggles to deal with. These include the fact that abatement has large upfront costs, with benefits that accrue in a relatively distant future and with some degree of uncertainty; the need to provide for the development aspirations of poorer countries and the emissions trajectories entailed by these; the uneven spread across the globe of net benefits from abatement; and the potential for 'free rider' issues created by the fact that no one country stands to gain from abatement efforts in the absence of concerted action. These last two issues create what Professor Garnaut has accurately characterised as a diabolical prisoner's dilemma problem.[1]

1.2 This overall context must inform the design of an emission trading scheme in a country like Australia with its small, open economy. There is a sensible policy case, as well as a strong ethical one, for Australia to take early emissions reduction action in order to break the potential deadlock created by the prisoner's dilemma and uphold the sort of global co-operative agreement required to address global climate change. We need to be clear that the brutally honest position is this: in the short to medium term the success of our domestic policy (indeed, of all advanced countries) will be a function of the ability to get all countries (notably the large emitting developing countries) on board, without which there will be no prospect of addressing climate change. [2]

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[1] Garnaut, R., *The Garnaut Climate Change Review: Final Report,* (2008) Commonwealth of Australia, pp 287-290

[2] The imperative of global action, particularly for poorer countries, is underlined by David Wheeler in *"Another Inconvenient Truth: A Carbon-Intensive South Faces Environmental Disaster, No Matter What the North Does",* Center for Global Development, Working Paper Number 134, December

1.3 In taking such action, Australia needs to adopt a scheme that is credible internationally and sustainable domestically. International credibility will be to a large extent a function of the abatement targets Australia sets for itself. Domestic policy sustainability is to a large extent a function of adjustment costs, particularly in the short to medium term when there are likely to be significant gaps in emission reductions efforts globally. Policy sustainability has an economic dimension – imposing large adjustment costs on the economy with no prospect of incremental global abatement gain is simply not an efficient economic proposition. And this impacts on the political dimension of policy sustainability by eroding support for emissions reduction, particularly in a time of economic uncertainty.

What are the policy issues that should govern the design of a carbon pollution reduction programme?

1.4 Given this particular background, what are the particular issues to consider as important in designing a carbon reduction programme?

1.5 Clearly the overarching goal is **environmental** – the abatement of greenhouse gas emissions. This is largely contingent on establishing the appropriate incentives to bring about substitution in production and consumption from emissions intensive goods and services to ones that are less so, and to prompt behavioural changes in consumers and producers. Abatement will, fundamentally, be investment driven. Firms will need to invest in a variety of activities – whether in R&D, in implementing new process or selling different goods and services – as they respond to changes in input costs, relative prices and changes in consumer demand.

1.6 The second set of issues consists of **adjustment issues**, which impact directly on the issue of domestic policy sustainability discussed previously. Adjustment issues range from the income effects on households stemming from the introduction of a price on carbon, to the impact on asset values of what the Government has called 'strongly affected' firms. Issues related to carbon leakage and the loss of

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2007. Wheeler's modelling suggests that even if rich countries emissions were reduced to zero, current emissions trends in poor countries would still place the world on course for serious climate change impacts.

competitiveness are adjustment issues that relate directly to the global nature of the abatement task and the prospect that, in the short to medium term, countries like Australia will be implementing emission reductions ahead of others.

1.7 **Carbon leakage and competitiveness** cut to the heart of both the economic and political dimensions of sustainability. While the political is often emphasised, it is important to underscore the economic efficiency aspects of both these issues too. Carbon leakage is a net cost to the global economy – it imposes adjustment costs with little or no return in terms of global abatement. Competitiveness losses can also be a global cost (and not just specific to Australia) as well. This will arise if carbon reduction schemes cause the relocation of activity away from Australia, when that activity would have been located in Australia had there been a concerted global effort to reduce emissions. The implication is that the introduction of a price of carbon in some countries but not in others will cause a distortion to the global allocation of production along lines of comparative advantage.

1.8 The third set of issues consists of **governance issues**. These include the potential for policy capture. Capture could manifest itself in a number of ways including: manipulation of the scheme parameters and its implementation; or manipulation of some other area of government policy (such as trade policy) in response to the effects (or supposed effects) of the carbon pollution reduction scheme.

1.9 Given these policy issues, a carbon pollution reduction scheme will be judged on the grounds of whether it is:

- effective in managing these different concerns, and any trade- offs between them;
- efficient in managing these concerns at least cost;
- ethical in terms of managing various equity and distributional issues that are raised by these concerns.

Critique of the CPRS and government approach

A weak target

1.10 Against this backdrop is a critique of the Government's approach as set out in the CPRS. Perhaps the most commonly heard criticism of the scheme is the overall target range of 5-25% that has been set. That target range is largely a reflection of the adjustment costs that may be expected, but also of the peculiarly high cost nature of the scheme that has been chosen. In respect of the former, it is likely that the Government's own modelling has understated the costs, in the short to medium term, of adjusting to a carbon price. This in turn is a reflection of the fact that the type of Computable General Equilibrium (CGE) model uses a full employment rule as its closure rule - that is, the economy is always at or near full employment levels, and responds to a shock almost immediately. In other words, for example, retrenched workers in the Pilbarra or in Newcastle become insurance agents in Melbourne or Sydney overnight. Clearly, this is unrealistic, and while the full employment rule and its consequent results can be a useful guide to what happens in the long term, it simply assumes away some of the most pressing policy problems in the short term. Indeed, it is quite likely that the Government is aware of the limitations of its modelling and has thus chosen a cautious approach as a consequence.

1.11 Setting aside issues of modelling, concerns regarding adjustments costs are also warranted on account of the high cost nature of the cap and trade mechanism within the CPRS, as compared to alternatives. This point is explained in further detail below when intensity-based approaches are discussed. The main issue is that the cap and trade approach essentially acts as a penalty-only mechanism: it penalises all emitters as a function of their emissions intensity, but offers no direct reward to firms that cut emissions.

1.12 If we marry the high cost aspect of the scheme design to concerns about adjustment that may not be captured in the modelling, then a relatively modest target range is a predictable outcome. It does, however, raise the question as to whether a more ambitious target could be adopted if an alternative scheme design were available that would be more attractive in managing adjustment concerns because the scheme has lower cost properties. This would be desirable from an environmental perspective, and in terms of sending a more credible signal internationally (recalling

here that the overarching objective sought through the early implementation of a carbon reduction scheme is to sustain a co-operative international agreement).

Not one but many schemes

1.13 The CPRS is a combination of several mechanisms and initiatives. Ostensibly, its central feature is a cap and trade mechanism, though it would be more appropriate to refer to it as a "quasi-cap and trade" mechanism. Under a standard cap and trade scheme, the quantity of emissions is fixed and the cost of emissions (i.e. the price of permits) is allowed to vary. In the case of the CPRS, this fixed quantitative restriction is relaxed. If the permit price reaches a certain level ($40 per tonne), the Government will issue an unlimited number of permits – as Richard Denniss put it in a recent presentation, the Government will start printing permits as if it were the central bank of Zimbabwe printing cash.[3] The price cap, as well as banking and borrowing provisions and gateway provisions that provide flexibility for the Government to adjust the overall targets in the light of prevailing circumstances reflect a concern on the part of the Government both to cap the overall costs of the scheme, and to limit volatility in prices. This in turn is motivated by a concern regarding the adjustment impact of permit price rising to higher than expected levels, and an acknowledgement that untrammelled volatility in permit prices is undesirable because of the investment uncertainty this generates.

1.14 **Mitigating the transitional adjustment impact** of emissions trading also provides a central motivation for revenue recycling, which under the CPRS would be undertaken through transfers to households and through tax offsets on transport. The transfers are mainly motivated on equity grounds, and specifically to offset the regressive income effect that the introduction of emissions trading can have through various channels (such as higher electricity prices).

1.15 **The proposals for emission-intensive, trade exposed (EITE) industries** differ significantly from other approaches to managing transitional issues. The method of permit allocation, which is tied to production and linked to an emissions intensity benchmark has strong affinities with the intensity-based approach discussed below. The main difference, as we shall see, is that while with normal intensity-based

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[3] Parliamentary Library Vital Issues Seminar, "*Carbon tax and emissions trading"*, 17 March 2009, audio available at: http://www.aph.gov.au/library/pubs/vis/index.htm

approaches, activities receive a net subsidy to the extent that they emit lower than a specified benchmark, under the EITES proposals activities will receive shielding (i.e. an implicit production subsidy) to the extent that their emissions intensity exceeds a certain benchmark. It is important to emphasise that under a cap and trade scheme, attempts to address competitiveness issues and carbon leakage by shielding firms from the cost of emissions must necessarily take the form of either a cash subsidy tied to production or a free permit allocation tied to production. An approach based on the former was recommended by Professor Garnaut, while the CPRS chose the latter route. Some of the drawbacks with the particular approach chosen by the CPRS are discussed below, but at this juncture the important point to note is that the proposals for the EITES involve a scheme that runs along qualitatively different lines to the central cap and trade mechanism.

1.16 The CPRS also includes as yet undeveloped proposals regarding **energy efficiency.** This is almost certainly likely to mirror "white certificate" schemes elsewhere and follow a baseline and credit approach, which again is substantially different to the cap and trade mechanism contemplated for the emissions trading proper.

1.17 Though not part of the CPRS itself, the proposed **MRET** will also follow a baseline and credit approach, in keeping with green certificate schemes found in other jurisdictions.

Commentary on the complexity of the CPRS

1.18 The CPRS is therefore a complex assemblage of different mechanisms. To some extent, all proposals for carbon reduction in a small open economy like Australia will have a degree of complexity. This simply stems from the wider, global context in which such schemes are implemented. Inevitably, reconciling the imperative for credible early action and domestic policy sustainability – through the management of adjustment issues – leads to multiple policy concerns and hence the need for multiple objectives. This is all the more true if the core of the reduction scheme is a particularly high cost proposal, as embodied by the CPRS. The critique that may be offered of the CPRS is that it selects instruments that are ill suited to the

wider policy context in which they are implemented, and to managing the policy concerns that stem from this.

Drawbacks of the CPRS vis a vis objectives sought

Environmental objectives

1.19 The CPRS does not perform well even on the one issue where it is often touted as having a clear advantage over other approaches – namely in providing certainty in the quantity of emissions reduction. For reasons already explained, the various safety valves included in the scheme preclude it from offering such certainty; or at least, what certainty there is exists only up to a certain point in circumstances when the demand for abatement exceeds projections. In this respect, the cap and trade proposal is not substantially different to an intensity-based approach or a tax, both of which allow for flexibility in emissions if the demand for abatement exceeds projections.

1.20 Moreover, the flexibility in the quantity of abatement under the CPRS is asymmetric – the cap loosens after a certain point on the upside when demand for abatement exceeds projections, but does not tighten if the demand for abatement undershoots projections (due to lower than expected emissions growth resulting, for instance, from economic growth that is lower than trend levels or because of unanticipated abatement having taken place e.g. through household initiatives). This is the much publicised issue of "additionality" that has been given a considerable degree of attention, and which means that under the current CPRS, the billions of dollars injected into funding insulation would lead to no additional abatement, but would rather shift the overall contribution made to abatement from large emitters to households (the Government's approach to remedy this is cumbersome and ineffective). The issue of additionality is not unique to the CPRS, but arises in all cap and trade schemes where targets are weak Indeed, this has led to calls for governments to intervene by putting a floor on carbon prices through periodic revisions of the overall cap – a form of intervention that is tantamount to converting the scheme into an intensity-based approach.

1.21 In contrast to the CPRS proposal, intensity-based measures and carbon taxes lead to a tightening of the cap when emissions undershoot expectations. This allows

for a greater degree of smoothness in the carbon price which in turn will provide a better basis for investment decisions including green industries and cleaner energy production. Indeed, the CPRS seems to have captured the worst of all worlds: it is a high costs scheme that, in attempting to contain those costs does away with the feature (certainty in reductions) touted as its greatest asset. Moreover, the asymmetrical nature of this modification removes any possibility of additionality abatement, a feature that has prompted calls for governments to intervene through target revisions.

EITES

1.22 There are several drawbacks to the approach used to handle EITES. Generally speaking, the Government is correct to avoid using border measures such as tariffs and border tax adjustments, as these would be complex to administer, inefficient, and almost certainly in contravention of global trade rules. The use of production subsidies would also be litigious from a WTO perspective to the extent that they are specific to certain firms and contingent on export performance and/or on the use of domestic inputs. The CPRS has got around that problem, on paper at least, by making its system of subsidies ("shielding") contingent on emissions intensity but this in turn raises other problems.

1.23 For a start, the granting of subsidies subject to whether an activity is in excess of a certain emissions threshold is perverse from an abatement viewpoint. Granted, the CPRS legislation does away with the problem that might have existed under the Green Paper proposals, namely that firms might be penalised if they cut emissions because they would drop below the threshold at which shielding was triggered. However, the proposals still mean that those firms that have been relatively efficient prior to the cut off date for measuring the emissions intensity thresholds are not rewarded for their efforts, which can have adverse dynamic efficiency consequences going forward.

1.24 A second issue is that the decision to selectively shield more emissions intensive firms or activities increases pressure on those less intensive trade exposed ones that are not shielded. This is not simply because they do not receive the financial benefit subsidies. A more fundamental issue is that for these firms, the shielding approach acts very much like a real exchange rate appreciation that is imposed specifically on them.

1.25 To see this, consider that the introduction of a price on carbon will inevitably increase the price of non-tradables relative to tradables (that is, the real exchange rate will appreciate). This is because tradable sectors are able to pass on the costs of the carbon price to a much greater extent than non-tradables given that the latter are essentially price takers. The introduction of shielding essentially carves out a sector of the tradables sector – the more emissions intensive – and protects them from the effects of this appreciation. But this simply means that the competitive impact of the price of carbon will fall more heavily on less emissions intensive activities. In particular, there will tend to be a shift in resources and factors of production away from these sectors to shielded sectors and to non-tradables. In this manner, the shielding approach is as much a tax on less emissions intensive activities as it is a subsidy to the more emissions intensive ones.

1.26 In effect, this creates disincentives for resource allocation towards activities that should on balance be promoted. Moreover, it is entirely possible that the disadvantaged sectors will seek relief through other avenues of policy, such as trade policy. This in turn can create further distortions that accentuate economic costs, and create trade tensions that pose an obstacle to securing the type of co-operation required to sustain a global agreement on climate change mitigation.

Governance issues

1.27 The administration of adjustment assistance through transfers, and more generally, the administration of permit revenues, raise a number of governance issues. For a start, the fact that revenues are required to mitigate the regressive impacts of the scheme on income distribution means that at least some of the double dividend (which could have been reaped through the use of permit revenue to cut distortionary taxes on labour and investment) will be foregone. Secondly, the administration of such transfers in a manner that does not affect consumption decisions is likely to be, at the least, problematic. A more general issue is that the large amounts of cash that will transit through government coffers raise all manner of possibilities for wasteful recycling. The modelling of scheme effects implicitly assumed that all recycling is done perfectly efficiently, and without creating any costs through distortions. This is unlikely to be the case. Indeed, experiences with government spending over the last few years suggest that governments are particularly bad at identifying socially optimal forms of spending.

Summary observations on the CPRS

1.28 In sum, the CPRS as it stands is ill equipped to initiate sustainable domestic reform in the realm of climate change policy. In particular, it presents a high cost approach to reform that creates various transitional adjustment issues. These have not been fully addressed in the economic modelling, and to the extent that they have been countenanced, have led to a variety of adjunct measures that (i) undermine the scheme's own aspirations to provide certainty in emissions reductions (ii) add various layers of complexity, notably through approaches to EITES and the recycling of auction revenues, that are conducive to serious economic distortions and problematic governance issues.

1.29 There is significant scope to build on the work done to date and improve the current design of the scheme.

Alternative approaches – an intensity-based approach

1.30 There are various types of scheme architecture that could be proposed as an alternative to the CPRS. While it is tempting to suggest that work on the design of a carbon reduction programme should recommence from scratch, pragmatism suggests that alternatives should build on work that has been done to date, and adapt existing proposals as far as possible.

Mechanics of an intensity-based approach

1.31 The approach proposed is termed an intensity-based approach, as it involves determining, for a particular activity or sector, an emission intensity baseline. Baselines across sector and activities in an economy are set at the level that achieves the desired emissions level. Any producer emitting more than the baseline has to acquire permits in excess of the baseline. Any producer emitting below the baseline is allowed to create and sell permits to those who need to buy permits. The revenue that low emitters earn can help pay for investing in low emission technology. The scheme works by simultaneously penalising higher emitters (just as occurs under a cap and trade) and rewarding lower emitters. In simple terms the scheme is a 'carrots' and 'sticks' approach.

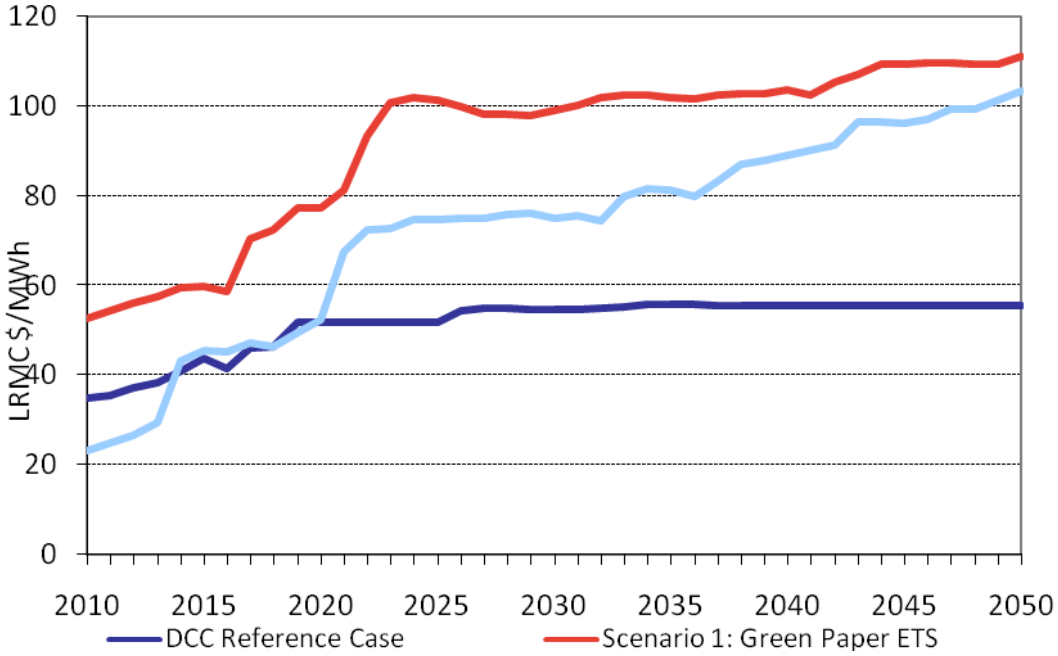
1.32 Conceptually, the scheme has similarities and differences with the cap and trade approach proposed by the CPRS. A cap and trade approach is in effect an intensity approach with an emissions baseline set at zero. This effectively entails an impost on all emissions. A higher baseline raises the threshold at which the cost impost sets in. Changing the threshold does not affect the extent to which high emitters are taxed relative to low emitters – rather, it simply means that the latter receive a net subsidy while the former face a net tax. What has changed is that the absolute level of cost impost is confined to the portion of emissions above the baseline. This in turn means that the absolute price effects of the intensity-based scheme are lower than under cap and trade. A cap and trade scheme could in theory achieve the same result by auctioning permits and then recycling revenue as a flat subsidy to producers. But this would involve the governance complexities of hauling revenue into the Treasury and out again, and the potential for capture that could arise as a consequence.

1.33 As already noted, the CPRS does indeed employ a variant of an intensity-based approach in its proposals for EITIs and shielding. Permits are allocated on the basis of output and subject to an emissions baseline. The main difference, however, is that subsidies kick in once the baseline is *exceeded*. Under the alternative intensity-based approach, the idea would be to create incentives to reduce emissions below the baseline.

Outcomes of this approach

1.34 One of the consequences of confining the cost impost to the proportion of emissions above the baseline is that it reduces the overall price impact of the scheme. Figure 1 (below) provides an overview of the relative price effects of this approach as compared to a cap and trade approach when applied to the electricity sector.

Figure 1:



1.35 The lower price effect is an important result as it deals with the principal adjustment concerns associated with the implementation of emissions trading: competitiveness effects, carbon leakage and regressive income effects. It also deals with these issues in a better and more systematic way than the proposals contained in the CPRS since:

- whereas the CPRS relies on developing a particular type of scheme for EITES to run in parallel with the cap and trade mechanism, the intensity approach would apply across the board to the economy;
- the intensity approach couples lower price impacts with incentives for producers to reduce emissions;
- whereas the CPRS proposals involve a large degree of revenue recycling to address adjustment issues, this approach internalises such transfers within the scheme.

1.36 One question that frequently arises concerns the impact of lower prices on impacts for abatement. In this context, it is important to distinguish between incentives on the supply side versus those on the demand side. On the supply side, incentives for substitution from high to low emissions technologies are preserved since what matters for substitution is the extent to which high emissions activities are taxed relative to low emissions ones. While the absolute value of the impost has decreased, in relative terms high emissions activities are still taxed relative to low emissions ones in the same manner as under cap and trade. The lower level of the absolute impost on producers is what mitigates adjustment issues – particularly for trade exposed activities where firms are price takers. The relativities in net taxation between high and low emissions activities is what sustains incentives to abate.

1.37 Concerns on the demand side are largely related to the effects of lower prices on energy consumption, and hence emissions. In response to this, it should be noted that for a start, demand response may well be muted under existing compensation arrangements for households, in which case the impact of the intensity-based approach would not be materially different to the CPRS proposals (though, as emphasised before, the revenue recycling associated with the CPRS would be avoided). Secondly, existing evidence suggests that demand side abatement is not particularly responsive to price signals.

1.38 There are a large number of abatement options that households could currently adopt on a "no-regrets" basis but that are not taken up, suggesting that other market failures are at work rather than the absence of a carbon cost in the price of energy. If so, a better approach to demand side abatement would be to rely less on the price signals dropping out of emissions trading, and more on a specific demand side abatement scheme, which would address underlying causes of market failure such as split incentives. Indeed, the CPRS proposals allude to the development of such approaches in respect of energy efficiency.

1.39 Demand side abatement schemes typically function as intensity-based approaches, and would therefore be a much more logical and natural extension of the intensity-based approach proposed here than it would be of the CPRS (to which it would be yet another adjunct mechanism).

Attaining abatement objectives

1.40 We already observed that the sum of the emissions baselines across the economy yields the overall reduction target that could be achieved. One issue that is frequently raised is that an intensity-based approach does not guarantee a fixed level of abatement – the worry is that if emissions grow faster than expected (say, because economic growth exceeds projections) then there is no quantitative mechanism that will force emissions back to the absolute target level as would happen under a cap. In theory, this is a valid criticism that could also be levelled at a tax. In practice, it is of little value since it presupposes that the alternative to the intensity-based scheme is an absolute cap. However, as observed earlier, this is not what is contemplated in the CPRS. There will be a variety of safety valve mechanisms that ensure that the cap is not a hard and fast one. The existence of these safety valves is in part a recognition of the higher cost impact of the cap and trade scheme.

1.41 Moreover, this criticism is turned on its head if we consider the opposite case in which emissions grow less fast than expected. Here, the cap implied by the intensity-based approach tightens. One implication of this is that the concerns regarding additionality raised in connection with the CPRS do not apply to an intensity-based approach. Another is that if there is a slump in economic growth, permit prices will not collapse as they would under cap and trade.

1.42 More generally, an intensity-based approach makes for less volatility in permit prices than the cap and trade approach, a point emphasised by Dr Frank Jotzo in his evidence before the Senate Standing Committee on Economics.[4] Smoothing volatility is desirable from an investment point of view.

1.43 To sum up, there is no reason to believe that the proposed intensity-based approach would fare any worse than the CPRS in confining emissions growth to a set target. Clearly, if the CPRS were to be amended to get rid of its safety valves then it would perform better in terms of abatement certainty, but this is unlikely to be adopted given the need for such safety valves to manage the adjustment issues created by the high cost nature of the CPRS. Moreover, the intensity-based approach fares better in managing these adjustment issues (on account of its lower price impacts), in

[4] Dr Frank Jotzo, *Proof Committee Hansard*,Exposure drafts of the legislation to implement the Carbon Pollution Reduction Scheme, 19 March 2009, p 36.

addressing additionality issues, and in managing carbon cost volatility. Because it is better at managing adjustment issue, it also offers the prospect of setting stronger targets than the ones proposed to date.

Implementing the intensity-based approach

1.44 Clearly, the central challenge in implementing an intensity-based approach lies in setting the different baselines. One option would be a linear reduction from historical levels. Under this approach, a sector or particular sub-sector would be subject to the same percentage reduction per year. This is the approach that is essentially adopted by the CPRS in respect of EITIs, though under the new approach this would be implemented across the board and not as part of a shielding package for activities that exceed an emissions intensity benchmark. The advantage of doing this is that it draws on information (carbon accounting) that will need to be collected as part of any scheme and applies a straightforward rule for abatement.

1.45 Another option is to set initial baselines according to world's best practice, and then specify a schedule of cuts thereafter either on a linear basis or on a view of expected abatement opportunities. The advantage of this is that it recognizes the scope for abatement. The disadvantage is that governments will typically be limited in their knowledge of expected abatement opportunities, and firms can take advantage of this asymmetry for rent seeking purposes.

1.46 There is also an option of setting a zero baseline for some sectors, which in effect means a reversion to a cap and trade scheme. Indeed, over time, as cuts are implemented to the baseline, the intensity-based approach will converge to the cap and trade approach. One way of looking at this is to suggest that the intensity-based approach will be used to manage the transitional adjustment issues associated with the introduction of emissions trading and, as these issues diminish (for example, as the participation of other countries in a cooperative solution is secured) the baselines can be phased down so that the intensity-based approach converges on a cap and trade approach. In effect, the intensity-based approach can be characterised as a "transition and convergence" approach.

Governance concerns

1.47 Intensity-based approaches are sometimes criticised on the grounds that they pose various governance challenges in terms of administrative requirements and

dangers from rent seeking. In response, it is important to note that all schemes are exposed to these, and that the CPRS proposals are particularly exposed to such concerns because of the plethora of adjunct instruments that are required to manage the adjustment costs associated with the scheme (to which must also be added the risk that the adjustment costs could spill over into governance challenges for other areas of policy such as trade policy).

1.48 Specifically in relation to the intensity-based scheme, it should be noted that the informational base required to run it is similar to the one required for the CPRS. Both require and draw on information drawn from firms' carbon accounting. Under the intensity-based approach, it would be necessary to guard against efforts to secure baselines that are too generous and that allow unwarranted gains for producers that perform better than baselines. One can address this challenge by drawing on a range of objective measures such as existing emissions levels, and agreed indicators of world's best practice.

1.49 In setting the baselines, it would also be necessary to take into account not only how resources are allocated within particular activities, but also how the baselines across the economy affect resource allocation across sectors and activities. This would require some form of modelling. While this is a demanding exercise, it is no more demanding than (properly) modelling the impacts of any other type of scheme.

Responses to critiques of the baseline and credit and intensity-based schemes

1.50 This note sets out the main criticisms that have been made of the intensity-based approach, and the responses to them.

1.51 The intensity-based approach creates a misallocation of resources by diverting a country's resources from high polluters in a low-emissions industry to low-emitters in a high pollution industry.

1.52 The underlying argument is that the CPRS sends a price signal to consumers: this encourages both supply side abatement (i.e. switching production from high to low emitters within a sector) and demand side abatement (i.e. switching consumption from high emitting *sectors* to low emitting *sectors*, where the end products are substitutes). It is argued the intensity-based allocation targets the former but not the

latter: it mutes price effects and therefore discourages substitution away from high emissions activities to low emissions activities.

1.53 The above is an academic criticism that is of little practical consequence.

- Opportunities for demand side abatement (or substitution of goods) are very limited, are generally not very responsive to price signals, and (where applicable) are more feasible in the long run;
- The (limited) examples of sectors that may be substitutes are trade exposed, hence a price signal is not feasible anyway (i.e. Australia is a price taker in global markets);
- The muting of the price signal is only transitional: over time the baselines for each sector fall and the effects of the scheme becomes more like cap and trade in the long run.

1.54 In practice, the criticism that intensity-based approaches lead to a serious misallocation of resources is overblown because it overstates the importance attached to abatement through demand side responses, and understates the problems that arise from trade exposure.

1.55 On the demand side front, the empirical evidence suggests that the most significant abatement opportunities for Australia are not primarily a function of demand side responses to product market prices. The McKinsey research into abatement cost curves shows a significant number of negative cost abatement options; the fact that these are not exercised at present suggests that there are market failures at work that are unlikely to be addressed by price signals, but would be more likely addressed by specific demand side programs. Moreover, the Government's own estimates of demand side abatement are based on a flawed calculus. Its modelling attributes approximately 120Mt of abatement to demand side response in the electricity sector in 2050. This result overstates the benefits of demand side reduction since they incorrectly use current emissions intensity of electricity of around 1tCO2/MWh to calculate emissions avoided from a reduction in MWh consumed. This is inconsistent with their own modelling results, since the emissions intensity of the market is around 0.1tCO2/MWh by 2050. This means that emissions avoided through demand side abatement would be 1/10 of what they suggest.

1.56 The issue of trade exposure is important since that has a material impact on how carbon pricing affects product market pricing. To see this, consider the case where you have one trade exposed sector such as a smelter and another manufacturer that is not trade exposed and less emissions intensive. Assume that the smelter is trade exposed and is a price taker in the world market, but that the other manufacturer is not, then any carbon price effects on the smelter would translate into an increase in imports and a substitution away from the goods produced by the other manufacturing industry. The higher the price the stronger the effect. This simply points to the risks associated with carbon leakage and the potential distortions that could arise by implementing a cap and trade scheme in a world where not everyone undertakes reduction commitments.

1.57 To sum up, while the price effects of the intensity-based approach have the potential to cause some distortions, they are unlikely to be severe. This could be tested through modelling. Moreover, the costs of those distortions that do arise need to be set against the costs of managing carbon leakage and the distortions this creates; the critique of intensity-based approaches set out above is essentially one-sided since it neglects the benefits side of the ledger. Moreover, because the intensity-based approach converges over time to a cap and trade outcome as baselines are cut, the initial distortions will diminish over time.

Intensity-based approaches are difficult to administer because the baselines are difficult to establish

1.58 There are a variety of ways of setting the relevant baseline. One would be to adopt some best practice base. The other would be to introduce linear cuts to emissions intensity over time. The latter approach has been suggested, for example, in New Zealand in regard to its proposed allocation for agriculture (which follows an intensity-based approach). If one were to adopt a linear cut approach, then the essential requirements are historical – actual emissions intensity and production data. This is not fundamentally different as a requirement from what is needed to run a cap and trade scheme, particularly a cap and trade scheme that also has an emissions intensity-based scheme appended to it (as is the case with CPRS, given that the approach followed in regard to trade exposed sectors is an output based allocation system).

1.59 More generally, this criticism reveals a fundamental misunderstanding of the complexities involved in running a cap and trade scheme in a context where competitiveness effects, carbon leakage effects and adjustment effects need to be managed. If these issues are to be addressed, complexities will inevitably arise in developing mechanisms that determine which producers are eligible for assistance on account of trade exposure and how much, or in developing mechanisms that address household adjustment effects.

1.60 This is abundantly illustrated by the CPRS, which has had to introduce a number of additional mechanisms (such as specific scheme for EITE sectors) to manage these adverse economic effects. These additional mechanisms are a direct function of the high cost impacts of the CPRS on a small open economy – one that is avoided under the intensity-based approach.

1.61 The appropriate comparison is therefore to compare the complexities of administering an intensity-based approach with the complexities involved in running a cap and trade scheme and all the add ons that are necessary to make such a scheme workable. It is somewhat disingenuous to dismiss the intensity-based approach as complex when the scheme currently on the table is one of Byzantine complexity.

Intensity-based approaches are susceptible to rent seeking

1.62 There is no principled reason as to why the intensity-based approach should be more susceptible to rent seeking and manipulation that any other scheme. Indeed, under a cap and trade scheme, such pressures are likely to emerge as a consequence of the impact such a scheme has on competitiveness and carbon leakage. For example, if the Government (as it has done) attempts to limit assistance to a certain subset of EITES that is likely to lead to those who are excluded to lobby in favour of inclusion. This has been the Government's experience ever since the Green Paper came out. More fundamentally, attempts to manage the trade impacts of the CPRS through approaches that arbitrarily cut off assistance are likely to be costly since they (i) run the risk of resource misallocation and (ii) increase the incentives for lobbying.

1.63 More insidiously, the price effects of a cap and trade scheme are likely to increase pressure on other areas of policy – notably trade policy. Pressures for protectionist trade policies are always on the increase globally in times of recession, and adding the cost impacts of a cap and trade scheme will only make matters worse.

Intensity-based delivers less certain abatement

1.64 While intensity-based approaches allow for more flex in the target if actual emissions diverge from projected ones, deviations would be expected to balance out over time as the emissions intensity of the economy falls (hence the link between emissions and growth becomes marginal).

1.65 Moreover, unlike to CPRS, the intensity-based approach can accommodate additional and unexpected abatement by tightening the implied cap. For example, voluntary abatement would be effective under this scheme (as opposed to simply easing the burden on other sectors under the CPRS).

1.66 A more fundamental issue is that this critique implies that the CPRS will deliver certainty in abatement. It will not. As they stand, the CPRS proposes an administered price for the first year, followed by the introduction of a price ceiling in subsequent years. This effectively says that the government is prepared to deliver abatement, but only up to a particular cost threshold. Even then, there is a heavy reliance on permit imports to meet Australia's target, so there is no certainty over domestic emissions in any case. The notion that the CPRS would deliver greater certainty in abatement is repeatedly propounded furphy.

Intensity-based approaches are not viable in an international context

1.67 The idea that a cap and trade scheme is viable in an international context but an intensity approach is not is largely predicated on the notion that the former will deliver certainty in abatement. As already indicated, this is largely an illusion, given the inclination to use safety mechanisms such as price caps in the CPRS. Secondly, even if that issue were to be set aside, the fact is that worries about the competitiveness effects of emissions trading (which are aggravated under a cap and trade scheme) have led major developed emitters to water down their targeted reductions. Thus, even if a cap and trade were to deliver more certainty, this has come at the expense of environmental outcomes. Low targets have become the antidote to poor emissions scheme design. These low targets have, and will continue to, make it difficult to secure international agreement on emission reduction schemes.

1.68 Fundamentally, the choice under a cap and trade scheme is between targets that are high but cannot be sustained, or between targets that can be sustained but are not meaningful. Consequently, there is no intrinsic value or requirement in pursuing a

cap and trade scheme from an international perspective. On the other hand, because the intensity-based approach handles the main adjustment issues related to leakage and competitiveness more efficiently, it offers the scope for pursuing tougher targets, which enhances the chances of securing international agreement. Moreover, given that the scheme has attractive properties for economies like China and India, successfully modelling its implementation can be beneficial to drawing these countries on board.

Canada's decision to abandon the scheme means it has no relevance to Australia

1.69 Canada's decision to harmonise its scheme with that of the US is logical given that Canada's trade is dominated by the US, and so there are gains to it from close integration with the US. If anything, the decision illustrates the importance of choosing a scheme that is appropriate for a particular context.

1.70 The notion that the intensity-based approach is consigned to the "dustbin of history" is fanciful and not supported by the facts. As a matter of practice, if one looks at countries considering emissions trading, many have incorporated intensity-based proposals to some extent in their approach. The CPRS proposes an intensity-based approach in addressing the issue of EITES; New Zealand has proposed an intensity-based approach in respect of agriculture; the EU proposes an intensity-based approach to deal with sector such as aluminium and cement, both in its own scheme and in the context of international sector agreements; Switzerland and Japan have proposed intensity-based approaches.

1.71 The issue is not that intensity-based approaches have lost their relevance. The issue is more that countries such as Australia have proposed a piecemeal approach that combines cap and trade with intensity-based measures, which is costly and distortive. What proponents of intensity-based approaches suggest is to adopt an intensity-based approach on a systematic basis, on the grounds that it can better handle the transitional adjustment issues, and progress over time toward a cap and trade scheme.

Reduction, Adaptation & Mitigation

1.72 Much of the policy discussion surrounding climate change has focused on reducing greenhouse gas emissions, which is understandable given the imperative of

stabilizing atmospheric concentrations of CO2. However, policies that help societies to adapt to the effects of climate change are also a vital part of the story. Both the Stern Review and Professor Garnaut's review devote important chapters to the issue of adaptation. By contrast, the topic has generally been neglected by the Federal Government – there is no mention of it in either the Green or White Papers.

1.73 The adaptation story is vital for two reasons. One is that a lot of climate change is already locked in through the accumulation of GHGs in the atmosphere. We are already seeing some evidence globally of changed weather patterns. Consequently, even under the most optimistic assumptions about reduction, we will experience climate change impacts over the coming years and decades. We thus have an adaptation issue in the short to medium term.

1.74 Secondly, even assuming a global agreement on reduction that makes significant cuts to GHGs, there will still be some residual climate change, given that it is almost inevitable that sea temperatures will rise by 2 degrees. This creates an adaptation issue in the longer run.

1.75 Climate change impacts have the potential to affect a wide range of activities and assets, from ecosystems to agriculture, to housing and human health. Australia is particularly vulnerable to climate change given, amongst other things, the fragility of a number of its ecosystems, its comparative advantage in international trade in agriculture, and the proportion of its population that live in low lying coastal areas. Absent adaptation, climate change is likely to cause severe stress to Australian society, its economy and the environment.

1.76 One of the important aspects of adaptation policy is that people and businesses are quite capable of developing adaptive responses. Farmers, for example, have a long track record of adapting to changing conditions. But that is not a justification for policy neglect. Individuals and businesses need information to make decisions, and consequently there is a need for research and development, as well as the dissemination of information. Sometimes individuals and businesses do not make decisions that are the most beneficial for society as a whole since they do not see the rewards from making those decisions (or the costs of not doing so). And some individuals, notably the aged, the sick and the poor, have a diminished capacity to adapt. So there is a role for government to step in. Finally, government itself can be the main culprit through badly designed policies. For example, if water resources are

not properly allocated or priced, then the damages from climate change will be greater. There is likely to be considerable scope for government policy action that delivers a win on adaptation as well as other environmental and resource management grounds.

1.77 So there is no question that a reasoned approach to adaptation is required. Thus far, whatever thinking there has been on adaptation has largely been undertaken at the state level. While that is not wrong in and of itself – since climate change will have particular localized effects – it would also be wrong not to address that challenge at a federal level. An approach where reduction is tackled federally but adaptation is left to the states can easily perpetuate what Professor Garnaut calls a false dichotomy between the two. Secondly, many adaptation issues cross state boundaries – water management being an obvious example – and consequently will demand a broader approach.

1.78 Further, adaptation won't happen immediately – a lengthy and expensive transition will be required, even if it is pursued with urgency. This will also require the effects of climate change to be managed, or ***mitigated.***

1.79 Since climate change will be accompanied by more extreme weather events such as more severe storms, floods, droughts and coastal erosion, there needs to be a public policy response to mitigate the effects of these inevitable events.

1.80 As this is a national problem it needs to be coordinated at a federal level with adequate resources to ensure a coordinated national approach.

1.81 In summary, there are three essential elements to an effective climate change policy. It must involve an effective reduction target based on a well designed emissions trading scheme that promotes investment certainty on low and zero emissions technologies, taking into account Australia's international competitiveness.

1.82 Further, there must be an integrated adaptation and mitigation policy that best prepares Australia for the inevitable aspects of climate change.

Concluding observations

1.83 One again, it is important to recall what the overarching objective is: to initiate sustainable domestic policy reforms with a view to securing a global co-operative outcome without which domestic efforts will largely be in vain. Meeting this objective requires implementing credible targets and managing adjustment costs effectively. The CPRS does neither. Its approach to managing adjustment issues raises all sorts of governance and policy problems, and the Government tacitly acknowledges the high cost nature of its proposals through the weakness of its target and measures that do away with the oft-touted abatement certainty offered by a cap and trade scheme.

1.84 The intensity-based approach affords a more efficient management of adjustment costs, while preserving abatement incentives. Its implementation can build upon efforts undertaken to date; indeed, over time, it could transition and converge to a cap and trade model as adjustment issues are managed and global cooperation is firmer.

Recommendations

Recommendation 1

1.85 That the Bills not be passed in their current form.

Recommendation 2

1.86 That there be a comprehensive adaptation policy with adequate resources to ensure a coordinated national approach for managing the effects of climate change.

Recommendation 3

1.87 Revising abatement targets upwards to a level that is more likely to secure an effective global agreement on emissions reductions, in order to stabilize atmospheric concentrations of Greenhouse gases at not more than 450 ppm.

Recommendation 4

1.88 That Treasury produce modelling on other types of schemes that have been proposed as alternatives to CPRS, including:

- **a conventional baseline-and-credit scheme;**
- **an intensity model;**
- **a carbon tax;**
- **a consumption-based carbon tax;**
- **the McKibbin hybrid.**

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