



Centre for Energy and
Environmental Markets

Draft Submission to the PM&C Discussion Paper
Abatement Incentives Prior to the
Commencement of the Australian
Emissions Trading Scheme

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About CEEM:

The UNSW Centre for Energy and Environmental Markets (CEEM) undertakes interdisciplinary research in the design, analysis and performance monitoring of energy and environmental markets and their associated policy frameworks. CEEM brings together UNSW researchers from the Australian School of Business, the Faculty of Engineering, the Institute of Environmental Studies, and the Faculty of Arts and Social Sciences, working alongside a growing number of international partners. Its research areas include the design of spot, ancillary and forward electricity markets, market-based environmental regulation and the broader policy context in which all these markets operate. You can learn more of CEEM's work by visiting its website: www.ceem.unsw.edu.au.

About this submission:

The design of effective, efficient and equitable Emissions Trading Schemes is one of CEEM's primary research areas. Over the last five years this has included detailed analysis of the NSW Greenhouse Gas Reduction Scheme (GGAS) and the European Union Emissions Trading Scheme (EU ETS). Some fifty papers and presentations on emissions trading over this period can be found on the CEEM website. We also run regular industry short courses and undertake consulting in this area. This brief submission draws upon some of the key findings of this work relevant to the question of how abatement activities can be encouraged prior to the introduction of emissions trading. Its primary conclusion is that the most credible, effective, efficient and equitable approach is to avoid administrative allocation of emissions allowances as far as possible and maximise auctioning. This automatically provides incentives for early action by market participants, and avoids the many challenges and pitfalls of estimating, inherently counterfactual, Business-As-Usual decision making by such parties.

This is an area of ongoing work for CEEM and we welcome feedback and comments. This submission is in draft form at present – we intend to provide a more detailed response in due course.

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General comments

Australia's forthcoming national Emissions Trading Scheme (ETS) has a vital role to play in establishing an effective and efficient climate change policy framework that can reduce Australian emissions in accord with the urgent, major and sustained emissions reductions likely required globally to avoid dangerous global warming.

The existing mix of policy measures from State Governments and the former Federal Government has proven entirely inadequate to the challenge. A key failing has almost certainly been the absence of a relatively broad based measure for pricing greenhouse emissions into energy-related decision making.

Unfortunately, to date the ETS proposals from both the State and Territory Governments Taskforce (NETT) and the Prime Minister's Taskgroup (PM), Federal legislation on energy and emissions reporting enacted to support its introduction and the current policy process underway do not appear to provide an appropriate framework for development of this scheme.

Experiences to date internationally with the EU ETS, and within Australia with the NSW Greenhouse Gas Reduction Scheme have highlighted the challenges in designing and implementing effective, efficient and equitable schemes.

These schemes are inevitably complex and abstracted. Their effectiveness depends on changing physical levels of emissions from market participants by providing 'carbon price' cashflows that support appropriate investment and operational changes. Unfortunately it has proven entirely possible, as seen with both GGAS and the EU ETS, to implement schemes that provide very significant cashflows to parties who are major emitters and aren't actually taking actions to reduce their emissions. This 'polluter gets paid' approach reverses the fundamental 'polluter pays' principle of environmental protection and represents a very perverse outcome for what is intended to be a key climate policy measure.

Key lessons from experience to date include the importance of:

- a good process for policy design and implementation that transparently and equitably includes all stakeholders rather than, for example, being dominated by large emitters and major energy users

- reducing abstractions between the physical emissions and the cashflows and maximising the simplicity of the scheme as far as possible – put simply, those emitting should be paying

- ensuring that emissions being traded are actually 'fungible' – that is, equivalent, rather than for example creating rules that make emissions from fossil fuel combustion somehow entirely equivalent to estimated net fluxes in selected ecosystems. You can only sensibly trade what you can measure and is fungible

- very high transparency so that the scheme's outcomes are not only done but seen to be done, and so that any problems can be quickly identified and then corrected.

Efforts to date in Australian policy development fall short in all of these regards.

The NETT and PM proposals identify some of the failings of the EU ETS including multiple administrative allocation phases. The intention to go 'upstream' to broaden coverage to transport and small-scale energy users also has considerable merit. However, the proposed response of an up-front compensation-based allocation for some parties and ongoing allocations to others has potentially very adverse effectiveness, efficiency and equity outcomes. Meanwhile, both proposals appear worse than the EU ETS in key areas including their support for questionable offsets, allowance price safety valves without make-good provisions and limited review options for strengthening the scheme in the short to medium term.

The National Greenhouse and Energy Reporting Act 2007 would seem to leave considerable discretion within the rule making, however, it clearly has the potential to provide far lower transparency than that implemented for the EU ETS which has compulsory public reporting of emissions and allocations at the facility level.

The current policy design process has performed poorly and needs review. Key decisions have not yet been justified yet work is underway on how to implement them. This discussion paper provides one example of this – abatement incentives prior to the introduction of a national ETS are being discussed in a context that includes assumptions that compensation is appropriate and that the broadest range of possible offsets are to be encouraged including land-use activities. As highlighted in the next section, a change in context has marked implications for the work currently underway.

In conclusion the most urgent task for the emissions trading policy process here in Australia at present is to ‘reset’ the inappropriate expectations that have been created for key stakeholders so far. These include

- that early targets and trajectories should be modest with a low penalty fee ‘safety valve’ and widespread use of offsets - this will delay changes to decision making in the critical energy sector.

- that compensation is appropriate as a general approach despite businesses having been aware of the climate change problem for more than 15 years, and

- more generally, longer-term investor certainty can be provided by governments despite rapidly changing climate science and international developments. .

Abatement incentives prior to the introduction of an ETS

It is very important that decision makers see appropriate incentives with respect to emissions-related decisions prior to the formal introduction of Emissions Trading. Poor scheme designs mean there is every possibility for creating perverse incentives that actually increase emissions from what they otherwise would have been prior to its introduction.

Unfortunately, it is near impossible to provide effective, efficient and equitable abatement incentives for a scheme offering administrative allocation of allowances. This requires credibly verifying that particular participant actions were taken only because of the imminent introduction of the scheme, and that these actions reduce emissions from what otherwise would have been. This is inherently counterfactual – there is no Business-As-Usual (BAU) outcome to compare against. In the first phase of the EU ETS some Member States tried to consider Early Action (e.g. Germany) within their allocation approaches. However, the process proved to be administratively burdensome and questionable. Some Member States e.g. UK and Finland have stated explicitly in their National Allocation Plans that it is impossible to consider early action in an objective, transparent, non-discriminatory way at the installation level (UK draft NAP, p. 22; Finnish NAP p. 28). .

Fortunately, however, there is a highly effective and robust allocation approach that automatically provides appropriate abatement incentives for participants – 100% auctioning. In this case, those market participants who actually did take actions that reduce their emissions from what otherwise would have been don’t have to buy as many allowances. In addition to this automatic reward for early action, auctioning provides many other advantages. We consider these in the next section.

10 reasons for auctioning instead of administrative allocation

1. Reason: Rent seeking costs

Grandfathering greenhouse gas emissions permits occurs when permits are allocated to firms for free on the basis of historical quantities of CO₂e emissions. It is often argued by industry that grandfathering is required because government can more adequately direct permits to sectors that are vulnerable to CO₂e cost increases.

However, since permits will have value, grandfathering creates a strong incentive for emitters to engage in rent-seeking behaviour. This results in extremely time-consuming and wasteful lobbying of government, legal expenses, PR campaigns, etc, in the hope getting permits for free and thus saving money and in addition receiving large “windfall profits” from favourable allocations.

When permits are allocated for free under grandfathering, emitters are encouraged to divert resources to lobby the government for exemptions or allocation rules which will favour their company, rather than in developing innovative ways to reduce future emissions.

Moreover, the higher administrative costs and delays in implementation from rent-seeking are an additional loss of social welfare brought about by rent-seeking. Such problems ultimately persuaded industry in the US to support the recently introduced FCC spectrum auctions¹.

Auctioning 100% of permits is a simple and efficient way of avoiding rent-seeking from grandfathering. However, the revenues should be put into the overall budget to avoid rent seeking with regard to revenue spending.

2. Reason: The Polluter Pays Principle (Distributional Aspects)

The “polluter pays” principle in the emissions trading market is the same as the “user pays” principle in other markets. It says that, since CO₂e emitters make use of a particular good (i.e. atmospheric emissions of CO₂e), they should have to pay for that privilege.

Under administrative allocation, however, the ownership of pollution allowances is transferred to polluters for free. Under phase one of the EU ETS scheme firms made windfall gains from passing on higher electricity prices to consumers for permits which were distributed for free. Hence, polluters were effectively rewarded for polluting by government which contradict the polluter pays principle.

Distributional effects like this can be avoided by allocating via an auction, were users must bid for permits and polluters in essence buy the right to pollute from the public/government. In the long run, all cost will ultimately be passed through and borne by consumers anyway.

3. Reason: Double Dividend

If government “recycles” revenue back to industry by reducing other distortionary taxes, the loss of industry welfare from having to purchase permits can be refunded in a way that reduces costs and increases market efficiencies, thus providing a so-called “double-dividend” from auctioning permits. However, if permits are given away for free no such opportunity occurs.

¹ Cramton & Kerr: “How and Why to Auction Not Grandfather” *Energy Policy* 30, 333-345, 2002

4. Reason: Reducing Initial Price Volatility (Static efficiency)

Anderson and Sutinen (2006) have shown that new markets for tradable allowances can experience significant price volatility as the market takes time searching for the (unknown) equilibrium market price. The perceived risk was found to complicate investment decisions and force out smaller players in the market for tradable fishing allowances.

Anderson and Sutinen discovered that holding uniform price auctions instead of grandfathering permits can help reduce this initial volatility when accompanied by an initial lease period, which prohibits permanent allowance transfers and allows participants to learn about market fundamentals without making irreversible decisions. Although most of the benefit arises from the initial lease period, the auction was found to contribute to the reduction in volatility.

5. Reason: Transaction Costs (static efficiency)

Stavins (1995) showed that an inefficient initial allocation of tradeable environmental permits can have an impact on the realised equilibrium cost of abatement in the market when marginal transaction costs from trading occur. He argues that in presence of transaction costs auctioning will increase efficiency of the emissions trading scheme, since it will need less trading on the secondary market in order to reach the equilibrium.

6. Reason: Net buyers, Net sellers and Risk Aversion (static efficiency)

When permits were grandfathered in the EU, the imperfect efficiency of the allocation created potential net buyers and potential net sellers in the secondary market for permits. Theoretic work by Balduson and von der Fehr (2004) shows that in situations where participants are risk averse, the net buyers will overinvest and the net sellers will underinvest, in order to become less dependent on the market, thus reducing efficiency of the market.

Anecdotal evidence of the EU ETS has shown that many of the smaller potential sellers chose to hold their permits until expiry, despite profitable opportunities to abate and trade. Aversion to the risk of being caught short of allowances on compliance date was exacerbated by a lack of awareness of marginal abatement costs and therefore of potentially profitable and efficient engagements in the permit market. Ignorance of marginal abatement costs and benefits was in turn exacerbated by an allocation which did not demand emitters to know their marginal valuations of permits/marginal abatement costs. Auctioning permits would help overcome this problem as it would not create a situation of net buyer and net seller and installations are required to assess marginal abatement costs prior to auctioning. This is expected to increase efficiency and liquidity in the secondary market through greater participation since costs of carriage of permits will be more transparent to small emitters.

7. Reason: Potential perverse incentives from free allocation (Dynamic Efficiency)

As analysed in detail by Åhman and Holmgren (2006), free distribution of allowances to new entrants coupled with the withdrawal of allocation from 'ceasing installations' created perverse incentives to keep inefficient plants in operation in the EU ETS. This reduced the efficiency of the overall system. Betz et al. (2006) found that there has been resistance to change in most EU Member States, and allocation rules for new installations have mainly remained unchanged in NAPs for phase II. Anecdotal evidence has shown that this has already had an adverse impact on both operational and investment behaviour, and hence dynamic efficiency is being compromised. The free allocation for trade exposed energy intensive industry in Australia might have the risk of having similar impacts. Therefore it is important to look for ways outside the ETS to deal with the problems of leakages, such as border tax adjustments in order to keep the incentive for abatement undistorted under the ETS.

Similarly there might be perverse incentives created by the iterative approach to allocation which can occur under grandfathering: if allocation is 'updated' between trading periods and the level of an installation's future allowance is a function of today's emission levels. Under these rules, an

installation that expects high future prices has an incentive to abate less today. This has been an unfortunate feature of the 2nd NAPs in the EU ETS.

Again, there might be a potential risk under the free allocation for trade exposed energy intensive industry. The rules of allocation for those industries have not been explained in the level of detail to be sure that they will not include any updating.

8. Reason: Bring emissions management and opportunities for abatement to the attention of top management. This is likely to increase the dynamic efficiency of the system.

9. Reason: Generating early and transparent price signals

Investment decisions are often made years in advance. Reliable future price signals of the cost of carbon for when investments come on stream are important for industry decision-making. Auctioning future vintages in advance is useful for generating future price signals and for establishing opportunities to hedge CO₂e price risk through early allocation and derivative products.

10. Reason: Automatic accounting of early action

Specific comments on the paper

For the reasons noted above we have not focused on the specific ‘issues’ raised in the discussion paper for comment. A few brief comments are, however, in order.

2.1. The discussion of emissions data highlights just one of the many challenges in administrative allocation of allowances. Without data there is no chance of doing it right. Even with the appropriate data it is still near impossible.

2.2. The discussion of how existing assets can be defined highlights the much larger problem in attempting to define Business-As-Usual asset investments – inevitably counterfactual when assessing possible credit for early action.

3.2. The proposal that there be no restriction on the types of activities that may be eligible makes the task of assessing additionality even more difficult. Most importantly there are bigger questions regarding offsets that need to be addressed first. And the rules have to be enforceable and enforced. For example, a recent study on the Clean Development Mechanisms (CDM), which requires the demonstration of additionality in the approval process, has estimated that some 40% of approved CDM projects seem not to meet these additionality criteria (Schneider 2007).

3.3. A program developed for voluntary purchase of emissions offsets is very unlikely to be appropriate for measuring offsets under a scheme imposing a legal obligation on parties – they have no independent choice on whether to accept the credibility and validity of the claimed emissions reductions in terms of the overall scheme’s credibility and effectiveness.

3.4. This discussion highlights the very significant transaction costs likely to be involved. Given the new Government’s intention to introduce the scheme in 2010 it hardly seems worthwhile to implement the incentives suggested in this paper, particularly if auctioning is chosen as the only or primary method of allocation.

3.6. Note that the proposal to introduce all these early emission reduction ‘credits’ into the scheme as first year dated allowances may have significant adverse impacts on early price discovery, particularly if the transparency with which these have been created is poor.



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