



# environmental defender's office new south wales

## *Submission on State Based Emissions Trading*

**November 2005**

### **The EDO Mission Statement**

*To empower the community to protect the environment through law, recognising:*

- ◆ *the importance of public participation in environmental decision making in achieving environmental protection*
- ◆ *the importance of fostering close links with the community*
- ◆ *that the EDO has an obligation to provide representation in important matters in response to community needs as well as areas the EDO considers to be important for law reform*
- ◆ *the importance of indigenous involvement in protection of the environment.*

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## 1. Introduction

The Inter-jurisdictional working group on emissions trading has released a Discussion Paper which seeks to consider a range of matters relating to the development of a State based emissions trading scheme. The areas that are considered in the Discussion Paper focus on the design of the scheme and include:

- use of a cap and trade system
- adopting a national and sectoral based approach
- addressing the cap level and allocation of responsibility for abatement
- whether to limit the scheme to the stationary energy sector
- identifying the greenhouse gases to be covered by the scheme
- permit allocation and duration
- monitoring and compliance
- the use of offsets
- structural adjustment mechanisms
- transitional arrangements for early abatement and new entrants

The State Governments are to be commended for their recognition of the urgent need to reduce greenhouse pollution. However the scale of the problem requires further and stronger action by all.

The Environmental Defender's Office Ltd (“**EDO**”) strongly supports initiatives that aim to ensure that greenhouse gas emissions (“**GHGs**”) are reduced in Australia and acknowledges that one mechanism to achieve this is through a robust cap on national emissions. However, the EDO is of the opinion that trading should not be treated as a solution in and of itself. Rather, there remains an urgent need to implement such an approach with, *inter alia*, policies that address demand side management in the energy sector and promote the development of low emission technology, thus allowing for a transition away from a carbon dependent economy.

Stakeholders have been invited to provide submissions in relation to a number of questions posed in the Discussion Paper. The EDO is pleased to provide a submission. The EDO is a Community Legal Centre that specialises in Environmental Law. Its functions include legal advice and representation, law reform and policy work, scientific advice and community legal education. Many of the questions posed are directed towards industry participants and are therefore beyond the knowledge or expertise of the EDO. However, we have sought to

address those questions where our own research, knowledge of international legal developments and experience may assist the working group.

For the reasons set out below, the EDO submits that the following matters should form the basis of any State based emissions trading regime:

1. a national cap and trade system should be adopted where permits or credits are surrendered according to a legislated timetable, thus achieving significant reductions in GHG emissions;
2. while it may initially be preferable to focus on carbon dioxide emissions from the stationary energy sector, the system should be robustly designed in a manner that allows it to expand to cover other industry sectors and other GHGs;
3. the allocation of permits by auctioning is the most efficient and environmentally effective approach and should be supported. However, if grandfathering is adopted, then allocations should be independently assessed in a manner that is consistent with the 'polluter pays' principle and that does not provide perverse incentives for participants to inflate historical emissions prior to the allocation;
4. there should be clear incentives for existing installations and new entrants to actively participate in the scheme and achieve emissions reductions;
5. penalties for non-compliance should be set at a level significantly high enough to deter participants from just paying the compliance cost. Penalties should also be linked to making good the excess emissions in future compliance periods.
6. Offsets should not be relied upon to achieve compliance. If offsets are to be allowed, clear guidelines limiting the circumstances for their use should be developed in accordance with the following principles:
  - a. Environmental impacts must be avoided first by using all cost-effective prevention and mitigation measures on-site. Offsets are then only used to address remaining loads of pollutants;
  - b. All standard regulatory requirements must still be met;
  - c. Offsets must never reward ongoing poor environmental performance;
  - d. Offsets will complement other government programs;
  - e. Offsets must result in no net increase of target pollutants.

## **2. Impacts of Climate Change**

Climate change has emerged over the last 10 years as one of the most pressing and complex global environmental problems. The observable impacts of climate change, such as extreme

and severe weather conditions, prolonged drought and high temperatures, are being experienced across Australia. In New South Wales, there are predictions that the area of snow cover in the Australian Alps will be reduced dramatically by 2020. Climate scientists predict that the impacts of climate change will be felt even more intensely over the coming century, with anticipated temperature increases, in best scenarios, of between 2 and 4 degrees by 2100 if greenhouse gas emissions remain at current levels.<sup>1</sup>

There is now almost no doubt that climate change is primarily the result of increased emissions of greenhouse gases as a result of human activities, and in particular, the burning of fossil fuels. In order to address the problem of climate change, even to stabilise emissions at current levels, significant reductions in greenhouse gas emissions, or deep cuts of at least 60% by 2050, are required.<sup>2</sup> The EDO submits that this requirement should be the foremost consideration in developing a state based emissions trading regime. In particular, the precautionary approach should be applied as a primary principle in the design of the scheme.

### **3. Response to Questions in the Discussion Paper**

#### **Proposal 1: Cap and Trade Schemes**

*Are there elements of other approaches which you would propose to include in a cap and trade scheme?*

The EDO is broadly supportive of a cap and trade system as being the most effective mechanism for emissions trading. It has been adopted successfully in a number of other jurisdictions, such as the UK and EU in relation to trading of GHGs and in the US for trading sulphur dioxide and nitrous oxide. Further, cap and trade systems have been assessed by institutions such as the World Resources Institute and the Pew Centre on Global Climate Change as being able to achieve environmental outcomes at least economic cost – provided the systems are well designed. For example, the *Protection of the Environment Operations Act 1997 (NSW)* provides that ETRs might include:

- a) Provision for the holding of tradeable emission permits or credits by members of the public;
- b) [a clear statement of] the rights and duties of participants in the scheme;
- c) safeguards against anti-competitive behaviour by participants in the scheme ; and

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<sup>1</sup> Dr Barry Pittock “Scientific Issues in Decision Making Context” 2004 CANA conference

<sup>2</sup> Dr Andy Pitman “Latest IPCC related science” 2004 CANA conference

- d) [provision for] the alteration, suspension, cancellation or forfeiture of tradeable emission permits or credits, or other rights or entitlements under the scheme.

The use of offsets provides particular challenges for the ETR. It will be important to ensure that offsets are verified according to widely acknowledged criteria. Offset producers would need to be accredited and registered. It is presumed that a national body overseeing the ETR or State environmental protection agencies will issue credits under the scheme.

The supervisory body will wish to ensure that sufficient permits remain available to meet emissions. However, an effective market requires minimal interference. In particular, the supervisory body must encourage investment in the reduction of GHG emissions similar to the incentives provided to invest in renewable energy under the Federal Government's Renewable Energy scheme (notwithstanding that the targets set under that scheme remain too low).

A provision for the opt-in of non-included participants should be included the scheme. The NSW Greenhouse Gas Amendment Legislation<sup>3</sup> provides large customers<sup>4</sup> and those carrying out State significant development to elect to be subject to Greenhouse Gas Benchmarks. A similar provision could be provided for large GHG emitters outside of the stationary energy sector. It is recognised that there are difficulties and costs involved in measuring diverse industries. As such, the opt-in could be a provision that is activated after an initial permit allocation and trading period.

Public participation in the ETR will also present challenges. An important design feature of an ETS is the need to create a transparent market with information readily available to participants and the wider public. This promotes investor confidence and public trust in the scheme. The use of an easily accessible public register (for example on the internet) that tracks price signals and trading activity is essential.

*To what extent does an Australian scheme need to be consistent and compatible with other schemes internationally (and therefore facilitate linking to those schemes)? What elements of a cap and trade scheme are required to ensure compatibility with other international schemes?*

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<sup>3</sup> *Electricity Supply Amendment (Greenhouse Gas Emission Reduction) Act 2002* (NSW), inserted as Part 8A of the *Electricity Supply Act 1995* (NSW)

<sup>4</sup> Large Customers are those that use 100 gigawatt hours or more per year at one site, or at more than one site provided one of those sites used 50 gigawatt hours or more per year.

It is important that the Australian scheme has the potential to link with international schemes. At this stage it is not possible at law to link with the Kyoto trading scheme. However, if the Federal Government were to ratify the Kyoto Protocol or future international instrument it would be beneficial to be able to directly link the schemes. Industry certainty is also important in this area. There are domestic schemes proposed in Canada, Japan and the US as well as the EU ETS which has commenced trading.

The most important factor in ensuring compatibility is flexibility in the system. This is also important for longer-term adaptation to future international protocols on climate change. It would also be beneficial to work with other schemes to develop harmonised and transparent means for calculating caps and estimating GHG projections.<sup>5</sup> This harmonisation would improve investor and participant confidence in a global trading regime.

Harmonised methods for setting caps would also avoid problems experienced in Europe, where some countries set their targets according to projections. The use of projections is less certain and more sensitive to input assumptions than the setting of caps based on historic emissions.<sup>6</sup>

*What are some of the opportunities and risks associated with linking to other international schemes? Is it possible to take advantage of the opportunities while minimising Australia's exposure to the risks involved? How might this be achieved (e.g. through single desk export arrangements)?*

A liquid carbon market will function more efficiently and will encourage emissions abatement wherever it can be achieved at least cost.<sup>7</sup> The greater liquidity provided by a larger permit market could contribute to international GHG reductions. Liquidity also provides clearer indications of marginal costs,<sup>8</sup> which allows participants to plan for investments in low-

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<sup>5</sup> WWF, *Carbon Countdown: Emissions Trading to combat Climate Change* (2005), <http://www.panda.org/downloads/climate/wwfsummaretreports071105lowres.pdf>, accessed 10 November 2005, p11

<sup>6</sup> WWF, *Carbon Countdown: Emissions Trading to combat Climate Change* (2005), <http://www.panda.org/downloads/climate/wwfsummaretreports071105lowres.pdf>, accessed 10 November 2005, p7

<sup>7</sup> ILEX Energy Consulting, *Consultation paper for the WWF: The Environmental Effectiveness of the EU ETS: Analysis of Caps*, [http://www.panda.org/campaign/powerswitch/news\\_publications/publications\\_detail.cfm?aNewsID=24617](http://www.panda.org/campaign/powerswitch/news_publications/publications_detail.cfm?aNewsID=24617), accessed 10 November 2005

<sup>8</sup> Betz, R. and MacGill, I., *Emissions Trading for Australia: Design, transition and linking options (Draft Version 1)*, Centre for Energy and Environmental Markets (2005), p5

emission technology. A larger exchange market also provides greater investment opportunities.

Studies have suggested that a Cap and Trade Scheme could be detrimental to Australia compared to other nations as the marginal cost of emissions abatement is predicted to be higher.<sup>9</sup> Studies of economic impacts on Australia were, however, based on Kyoto trading. As Australia is locked out of this system, it is likely that economic difficulties would be more pronounced in joining an Australian ETR with an international ETR such as the EU ETS. In particular there would be price variation whilst the market stabilises.<sup>10</sup>

Initially, linkages with international schemes could result in price variations and permit leakage.<sup>11</sup> This problem would likely be short-term if interference in the market is minimised. Economic theory suggests that prices would stabilise over time. It is not recommended that the Government interfere in the pricing of the market as this distorts prices and creates investor uncertainty. In particular, there should be no provisions for ex-post adjustments if prices rise above a certain level.<sup>12</sup>

It is also important that domestic action to reduce climate change remains the primary emission reduction focus. Ensuring that the scheme is built with sufficient flexibility to allow international compatibility should minimise permit leakage.

*What elements of the European emissions trading experience should be taken into consideration in establishing the broad framework of the scheme?*

The EU ETS provides an extremely useful guide to the design of a cap and trade system as it is the largest and most significant trading regime for GHGs. The scheme provides guidance as to appropriate ways to set the cap, to determine sectoral coverage and to address matters such as offsets and banking. An important feature of the EU ETS is the stringent monitoring and compliance regime which uses significant penalties to ensure the cap is achieved. The EDO believes that this should be looked at closely when designing an Australian regime.

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<sup>9</sup> Power, T. M., "Issues and opportunities for Australia under the Kyoto Protocol" (2002) 20 *Environmental Planning and Law Journal* 459-475, p470

<sup>10</sup> Power, T. M., "Issues and opportunities for Australia under the Kyoto Protocol" (2002) 20 *Environmental Planning and Law Journal* 459-475, p470

<sup>11</sup> James White, *Speech given at the Sydney Consultation Forum*, 18 October 2005

<sup>12</sup> This has been proposed for the Canadian system.

Given the limited period during which the EU ETS has been operational, it is difficult to evaluate its success or point to clear weaknesses that ought to be avoided. However, one area where problems have arisen in the European approach has been the need to set National Allocation Plans (NAPs). Each country has used different methodology in setting and allocating caps which has resulted in complexities.<sup>13</sup> Ultimately, although there is a requirement for national legislation to be compatible with existing EU legislation and for there to be transparency as to how national allocations are set having regard to sectors – it has been difficult for individual countries to balance domestic and EU interests. It is unlikely that similar problems will be as pronounced between Australian States due to the operation of the national electricity market. However, if industries outside the stationary energy sector are to be included in the scheme, then the location of those industries will affect the process of setting the cap.

Another problem which arose in the EU related to the use of projections to set the cap. It is unclear how useful some projections of emissions may have been given the sensitivity of projections to input variables which, in turn, are subject to political influence.<sup>14</sup> In other words, there was a suggestion that some participants inflated business-as-usual scenarios prior to the setting of the NAPs which resulted in an over-allocation of emissions allowances in some countries.

It will be important to ensure that the design of the system remains transparent and open to stakeholder consultation and comment. This transparency must be continued once the scheme commences. It is recommended that independent oversight is used to ensure compliance by participants. The EU ETS has binding guidelines<sup>15</sup> on monitoring. Importantly, where industries self-report on GHGs, reports must be monitored by an independent third party in an auditing process. Monitoring of the trading system is also important. The EU system verifies trade through up to three electronic data systems.<sup>16</sup> It will be important to ensure that any trade-monitoring system prevents double-counting of permits and monitors closely which participants hold permits. An additional safeguard would be the use of a public register on which all emissions data and audits could be published for public scrutiny.

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<sup>13</sup> WWF, *Carbon Countdown: Emissions Trading to combat Climate Change* (2005), <http://www.panda.org/downloads/climate/wwfsummaretreports071105lowres.pdf>, accessed 10 November 2005, p4

<sup>14</sup> WWF, *Carbon Countdown: Emissions Trading to combat Climate Change* (2005), <http://www.panda.org/downloads/climate/wwfsummaretreports071105lowres.pdf>, accessed 10 November 2005, p7

<sup>15</sup> See [http://europa.eu.int/comm/environment/climat/pdf/c2004\\_130\\_en.pdf](http://europa.eu.int/comm/environment/climat/pdf/c2004_130_en.pdf), accessed 10 November 2005

<sup>16</sup> Pew Centre on Global Climate Change, *The European Union Emissions Trading Scheme: Insights and Opportunities*, [www.pewclimate.org](http://www.pewclimate.org), accessed 10 November 2005, p8



## **Proposal 2: National & Sector Based**

*Is national consistency an appropriate goal/could a system operate effectively without all States and Territories involved?*

National consistency is an appropriate goal. National consistency is crucial in preventing emissions leakage within Australia. The non-participation of one jurisdiction or variation in caps between jurisdictions could lead to lower marginal costs in some jurisdictions. This provides an incentive to invest in that jurisdiction and may increase costs for participants in participating jurisdictions or jurisdictions with more stringent environmental requirements.

This is not to say that a scheme in one or more jurisdictions would not be supported. The EDO supports initiatives aiming to reduce GHGs at any level, including within individual companies. However, it is important that any State-wide scheme is underlined by strong political support. Individual state action is likely to incur greater economic and thus political costs in that jurisdiction. This could undermine support for the scheme in that jurisdiction in the long-term and may provide non-participating jurisdictions with an excuse for not implementing such a scheme in the future.

*Are there any jurisdictional variations that could be considered that do not undermine the desire for national consistency?*

If permits are auctioned, there will be revenue raised for investment by participating governments. Some regions and participants will have greater marginal compliance costs either due to higher abatement costs or because of trade exposure. One possible use for auction revenue would be to provide financial assistance for initial compliance costs for those participants. This could be done either through direct financial assistance or through the reduction in distortionary taxes.

*What institutions would be required for a nationally administered scheme?*

An emissions trading program must be backed by an institution or body that is able oversee the scheme. This institution or body should consist of representatives from the participating jurisdictions. It is preferable that such a body would be able to ensure consistency across jurisdictions and connect monitoring to compliance. This approach worked successfully in the

United States where the federal government coordinated the Acid Rain Program and the OTC NOx Budget.<sup>17</sup>

Day-to-day monitoring and compliance is best carried out by the independent Statutory Authorities in each jurisdiction. The multi-jurisdictional body would focus on the overall scheme and make decisions as to its future development.

### **Proposal 3: Sectors & Targets**

*How should a cap for the stationary energy sector be set? And how should it relate to an economy wide emissions target? How should the abatement potential of the non-covered sectors be taken into consideration in setting the cap for the stationary energy sector scheme?*

Although Australia has not ratified the Kyoto Protocol, it remains committed to achieving its Kyoto target of limiting total net emissions to 108% of 1990 levels. The most recent and best scientific evidence suggests that in order to limit global temperature increase to 2 degrees by 2100 it will be necessary to cut GHG emissions by between 60-80% of 1990 levels. Setting an initial abatement target based on Kyoto compliance in the period 2008-2012, whilst a first step, will not contribute significantly to required emissions reductions. Any cap should seek to achieve meaningful emissions reductions over clearly defined long term timeframes.

The Discussion Paper envisages that a State based ETS will primarily be focused on setting a cap for the stationary energy sector (covering electricity, gas and coal). This sector accounts for approximately 47.6% of all GHG emissions in Australia.<sup>18</sup> The industrial sector and fugitive emissions account for a further 10.3% of GHGs. The EU ETS has a wider sectoral coverage than just stationary energy. It applies to large scale industries such as oil refineries, coke ovens, metal ore and steel, cement kilns, ceramic and pulp and paper. Individual countries determine the level of effort required from regulated sectors and the extent to which their national targets are met from EU ETS sectors vs other sectors. Whilst complex, this provides a level of flexibility within the scheme.

The World Resources Institute has commented that a GHG cap and trade system should strive to incorporate a broad and diverse set of emissions sources. The rationale for this is that it serves to lower costs, achieve environmental objectives, accelerate innovation and spur

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<sup>17</sup> World Resources Institute, *Greenhouse Gas Emissions Trading in US States – Observations and lessons from the OTC Nox Budget Program*, (2005) [www.wri.org](http://www.wri.org), accessed on 13 November 2005, p.26

<sup>18</sup> NSW Greenhouse Office, *NSW Greenhouse Strategy: Discussion Paper*, May 2005, [http://www.greenhouseinfo.nsw.gov.au/\\_data/page/943/discussion\\_paper.pdf](http://www.greenhouseinfo.nsw.gov.au/_data/page/943/discussion_paper.pdf), accessed 18 October 2005, p6

deeper engagement with the private sector.<sup>19</sup> In order to achieve the greatest overall reductions in GHG emissions, a broader sectoral coverage is required. Whilst there are difficulties in determining baselines and monitoring emission from some sectors (such as transportation) other sectors are more adaptable and in many cases are already monitoring emissions. There may be scope to develop opt-in arrangements to enable non-stationary energy sectors to participate if initial regulation is not possible.

*Should scheme caps and/or economy wide targets be set beyond the first commitment period of the Kyoto Protocol? For example, are medium to long term scheme caps and/or economy wide targets an appropriate means for providing investment certainty? Are there other means of providing reasonable certainty for investors and what are their relative merits?*

The major difficulty in this area is uncertainty as to the likely GHG emission levels that will be set under future international agreements. Certainly, targets should be set to 2012. Beyond this, it is important that the scheme encompasses sufficient flexibility to adapt to future target levels and that participants are aware that the scheme clearly envisages GHG reductions over time and alterations to the objects of the scheme

Longer-term targets are important for participant certainty in investing in emissions reducing technology. As such, it is recommended that provisional targets are set into the future. As additional certainty, the scheme could include a just compensation provision. This provision would be triggered only where the targets set are too lax in comparison to future agreements on GHG reductions. Unfortunately, the lack of Federal Government participation means that there will remain uncertainty as to whether these provisions would be struck down by future Federal legislation.

*If medium to long term caps were to be considered, how should they be determined?*

Long term targets should have regard to the overall objective of capping GHG emissions. That is, to avoid the dangerous environmental and health impacts of human induced climate change. Current projections show that there will be serious damage to ecosystems, including coral reefs, tropical rainforest and alpine areas, if global warming in the range of 0.5 - 2 degrees occurs by 2100. Impacts upon human health and welfare, such as disease, food security and water scarcity, could be catastrophic if temperature increase of 3 – 4 degrees occur. With this in mind, GHG emissions reductions must be set at levels that will contribute

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<sup>19</sup> World Resources Institute, *Greenhouse Gas Emissions Trading in US States – Observations and lessons from the OTC Nox Budget Program*, (2005) [www.wri.org](http://www.wri.org), accessed on 13 November 2005, p.32

significantly to limiting the extent of climate change. We note that the EU has collectively committed to an 8% reduction on 1990 levels in the initial commitment period, but acknowledges that deeper cuts will be required beyond that. Similarly, the UK proposes an initial reduction of emissions at 20% of 1990 levels by 2010, well beyond its Kyoto Target of 12.5% by 2012. Long term, the UK proposes to reduce emissions to 60% of 1990 levels by 2050.<sup>20</sup>

#### **Proposal 4: Stationary Energy Sector**

*How should the stationary energy sector be defined?*

The Working paper provides a broad definition of the stationary energy sector which encompasses electricity generation, oil refining, gas processing, combustion emissions associated with coal and gas in non-transport uses. This range of activities appears to have been chosen on the basis that their emissions can either be accurately measured at a reasonable cost or can be accurately estimated. Whilst there is uncertainty about the meaning of “coal and gas non transport uses” it is assumed that this would encompass emissions relating to the mining and processing of those resources. The range of emission sources appears to be more limited than that adopted by the EU ETS. Industrial emissions, being those from large electricity, gas and coal users should be included in a State based ETS. Those emissions are able to be accurately monitored or estimated and significant emission reductions can be achieved if these industries (for example Aluminum smelters) are incentivised to invest in new technology in order to comply with the cap.

*Where would the most effective and efficient points to place emission liabilities for the different stationary energy sub-sectors (ie. gas, electricity etc.) be - at point of emission, upstream or downstream?*

The Discussion Paper states that it is anticipated that liability will be placed on electricity generators, although no decision has been reached for coal and gas. This represents a point of emission / down stream trading approach. Magaree note that such an approach typically covers less than 50% of a country’s total GHG emissions.<sup>21</sup> An upstream approach, which addresses the carbon content of fossil fuels consumed and involves producers and importers of fossil fuels as participants, can cover up to 90% of a country’s total greenhouse emissions,

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<sup>20</sup> DEFRA, *e-Digest: Statistics About Global Atmosphere: Agreements to Limit Greenhouse Gas Emissions*, <http://www.defra.gov.uk/environment/statistics/globalatmos/gaemlimit.htm>, accessed 21 November 2005

<sup>21</sup> Magaree Consultants, *Linking Domestic and Industry Greenhouse Gas Emission Trading Systems* (2001) p.38

often with few participants. There are almost no schemes that have been designed on an upstream basis, although Sweden and Norway have investigated hybrid options.

Whilst the EDO would prefer to see GHG emissions regulated at their source it is acknowledged that upstream regulation may be exceptionally difficult to achieve from a technical and political perspective. However, there should be mechanisms to allow efficient producers to receive incentives for emissions reductions at the stage of mining or production.

*Should non-emitting energy generators (eg renewable energy) be included in the scheme as they will not incur a liability?*

Yes. If renewable generators are included in the scheme it may promote and encourage clean renewable power generation. Renewable generators would be able to sell their allocation back to the market and the money raised can be used to finance new generation and investment in research and development.<sup>22</sup>

*Should reporting requirements be implemented through existing reporting regimes (eg through state environmental laws) or under a new reporting regime? And what processes would be needed to collect data in future?*

As noted above, a State based ETS should be backed by a new institution or agency that can play a central coordinating role and that is responsible for monitoring and reporting on emissions, tracking allowances, reconciling differences and assessing compliance. Such an approach is preferable to a de-centralised state by state system which may not be able to provide the consistency and transparency required to give the market confidence. The agency would need to establish a monitoring and reporting scheme that could accurately capture data from a wide range of sources and that could demonstrate transactions and compliance through a publicly available register.

A less favourable alternative, also noted above, is to allow for State environmental protection agencies to collect, assess and monitor data. This approach should only be used as an interim measure, with a clear intention that a national institution or agency will be established. Further, a State-based approach will make it imperative that data is available in a public register and is open to ongoing community scrutiny and comment.

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<sup>22</sup> World Resources Institute, *Greenhouse Gas Emissions Trading in US States – Observations and lessons from the OTC Nox Budget Program*, (2005) [www.wri.org](http://www.wri.org), accessed on 13 November 2005, p.21

## Proposal 6: Permit Allocation

*What criteria should be used to select the method of allocation (eg. equity, market efficiency, cost minimisation etc.)?*

These issues are considered in the following answers.

*Does ‘grandfathering’ of permits disadvantage ‘early movers’? Does ‘benchmarking’ (or free allocation on an industry benchmark) disadvantage existing entities?*

Whether early movers will be disadvantaged depends on the means by which permits are grandfathered. There are four main options. First, allocations may be made on the basis of historical emissions.<sup>23</sup> This approach is seen by many commentators as flawed, given the disincentive to early movers<sup>24</sup> and the incentive to industry to increase emissions levels before implementation of the scheme.<sup>25</sup> A second option would be allocate according to projected emissions levels. This does not disadvantage early movers but is costly in terms of setting a benchmark against which performance can be measured and, like the first option, requires installation specific analysis.<sup>26</sup>

The third and fourth options allocate permits on the basis of an industry average or industry best practice for emissions from a similar source.<sup>27</sup> This system is beneficial for early movers and allows new entrants to compete where they have relatively low emissions.

The disadvantage to existing entities is minimised if allocation is free. The emphasis is placed on heavy emitters with high abatement costs to actively participate in the carbon trading market in buying additional permits. Whilst this increases marginal costs for some emitters, the overall goals of GHGe reductions are ensured certainty by a maximum level of emissions.

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<sup>23</sup> Inter-Jurisdictional Working Group on Emissions Trading, *Background Paper for Stakeholder Consultation*, <http://www.cabinet.nsw.gov.au/greenhouse/background.pdf>, accessed 19 October 2005, p15

<sup>24</sup> Burtraw, D., “Carbon Emission Trading Costs and Allowance Allocations: Evaluating the Options” (2001), 145 *Resources* 13-16, [www.rff.org/rff/Documents/REF-Resources-145-co2emmis.pdf](http://www.rff.org/rff/Documents/REF-Resources-145-co2emmis.pdf), accessed 19 October 2005, p14

<sup>25</sup> Boemare, C. & Quirion, P., *Implementing Greenhouse Gas Trading in Europe: Lessons from Economic Theory and International Experiences*, (2002) Centre International de Recherche sur l’environnement et le Développement, France, p7

<sup>26</sup> Inter-Jurisdictional Working Group on Emissions Trading, *Background Paper for Stakeholder Consultation*, <http://www.cabinet.nsw.gov.au/greenhouse/background.pdf>, accessed 19 October 2005, p15

<sup>27</sup> Inter-Jurisdictional Working Group on Emissions Trading, *Background Paper for Stakeholder Consultation*, <http://www.cabinet.nsw.gov.au/greenhouse/background.pdf>, accessed 19 October 2005, p16

It is inevitable that some costs will flow to industry under a grandfathering or auction approach.

*If permits were to be allocated by auctioning, what kind of auctioning system should be used and why?*

There are several methods of permit auction. A sealed-bid auction allows bidders to simultaneously submit demand schedules. These are aggregated to produce a demand curve. The point at which demand meets supply is the price of permits (“**the clearing price**”). Those bidding at or above the clearing price receive permits.<sup>28</sup> The actual price of the permits may be that bid or a uniform price for successful bidders. Uniform prices may lead to under-bidding in an attempt to influence market price,<sup>29</sup> particularly where there are few market-members. These auctions do, however, encourage smaller bidders to participate.<sup>30</sup>

Ascending auctions, by unit or by clock provide an alternative. Ascending unit auctions allow multiple sealed-bid auctions to occur. The initial clearing price is announced and all bidders are allowed to re-evaluate their position and re-bid in later rounds. In the final round the clearing price is the point at which permits are allocated. Attempts to distort the market by bidding only in later rounds or holding off during rounds are precluded by requiring bids to be entered in the initial round and if below the clearing price, to be improved in the following round or rejected permanently.<sup>31</sup> Credits should be priced at the bid amount in order to avoid bidders submitting a steep demand schedule which can discourage demand from other bidders.<sup>32</sup>

Ascending-clock auctions are ongoing rounds of auctions where the price is set according to the quantity of credits demanded versus those available. Bidding continues until the quantity available can meet supply and allocations are made at the relevant price. This method is preferable in larger markets where bid-sharing is more difficult.

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<sup>28</sup> Cramton, P. and Kerr, S., *Tradable Carbon Permit Auctions: How and Why to Auction Not Grandfather*, Discussion Paper 98-34 (May 1998), Resources for the Future, p5

<sup>29</sup> Cramton, P. and Kerr, S., *Tradable Carbon Permit Auctions: How and Why to Auction Not Grandfather*, Discussion Paper 98-34 (May 1998), Resources for the Future, pp5-6

<sup>30</sup> Cramton, P. and Kerr, S., *Tradable Carbon Permit Auctions: How and Why to Auction Not Grandfather*, Discussion Paper 98-34 (May 1998), Resources for the Future, p6

<sup>31</sup> Cramton, P. and Kerr, S., *Tradable Carbon Permit Auctions: How and Why to Auction Not Grandfather*, Discussion Paper 98-34 (May 1998), Resources for the Future, p7

<sup>32</sup> A steeper curve would indicate to bidders who had lost in the previous round that they would be unable to compete in further rounds - Cramton, P. and Kerr, S., *Tradable Carbon Permit Auctions: How and Why to Auction Not Grandfather*, Discussion Paper 98-34 (May 1998), Resources for the Future, p8

Auctions are generally rejected by industry in favour of grandfathering.<sup>33</sup> Auctions lead to a transfer of wealth from the private to the public sector in the purchase of credits.<sup>34</sup> Auctions are also more problematic for participants who are trade exposed<sup>35</sup> and for industries that cannot pass on costs downstream. Consumers may end up bearing compliance costs.<sup>36</sup> However, Government revenue would be particularly useful in targeting this latter problem.

Looking at the benefits of auctioning, however, it is more cost-effective than grandfathering.<sup>37</sup> Auctioning can be up to 50 percent cheaper than grandfathering.<sup>38</sup> It allows the market to set the appropriate demand level, with industry determining when and whether they wish to implement emissions reducing schemes.<sup>39</sup> Auctioning also provides incentives for early actors. Emitters need only purchase credits required, so a participant who has taken early abatement action will require fewer credits.<sup>40</sup> Finally, auctioning supports the ‘polluter pays’ principle. This will be particularly true where government strategies prevent or offset costs being passed on to consumers.

*Should the initial allocation system differ from ongoing permit allocation? Should there be a transition from one system (eg administrative allocation) to another (eg auctioning)?*

The preferred approach of the Working Group in using a hybrid approach is a sensible solution provided there is a trend towards auctioning in the long-run. This approach has been adopted by the EU ETS which allows 5% auctioning in its first phase and 10% thereafter.

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<sup>33</sup> Cramton, P. and Kerr, S., *Tradable Carbon Permit Auctions: How and Why to Auction Not Grandfather*, Discussion Paper 98-34 (May 1998), Resources for the Future, p16

<sup>34</sup> Cramton, P. and Kerr, S., *Tradable Carbon Permit Auctions: How and Why to Auction Not Grandfather*, Discussion Paper 98-34 (May 1998), Resources for the Future, p17

<sup>35</sup> Jones, D., “The Kyoto Protocol, Carbon Sinks and Integrated Environmental Regulation: an Australian Perspective” (2002) 19(2) *Environmental and Planning Law Journal* 109-130, p120

<sup>36</sup> This is not to suggest that grandfathering will prevent price rises resulting from the scheme

<sup>37</sup> Boemare, C. & Quirion, P., *Implementing Greenhouse Gas Trading in Europe: Lessons from Economic Theory and International Experiences*, (2002) Centre International de Recherche sur l’environnement et le Développement, France, p6

<sup>38</sup> Burtraw, D., “Carbon Emission Trading Costs and Allowance Allocations: Evaluating the Options” (2001), 145 *Resources* 13-16, [www.rff.org/rff/Documents/RFF-Resources-145-co2emmis.pdf](http://www.rff.org/rff/Documents/RFF-Resources-145-co2emmis.pdf), accessed 19 October 2005, p14

<sup>39</sup> Jones, D., “The Kyoto Protocol, Carbon Sinks and Integrated Environmental Regulation: an Australian Perspective” (2002) 19(2) *Environmental and Planning Law Journal* 109-130, p120

<sup>40</sup> Cramton, P. and Kerr, S., *Tradable Carbon Permit Auctions: How and Why to Auction Not Grandfather*, Discussion Paper 98-34 (May 1998), Resources for the Future, p11



Given the present international uncertainty as to the future of ETR action post 2012, it is likely that grandfathering will be the predominant method of allocation in the initial stages. Grandfathering reduces initial compliance costs for participants and allows for a grace period in order to budget for future permit purchases. However, it is extremely important to avoid market distortions (such as inflated historical emissions claims) as these will detract from investment in new technologies and undermine the achievement of the cap.

Long-term, auctioning will lead to greater economic efficiency than grandfathering.<sup>41</sup> It also encourages early action in light of likely future reductions in the GHG emissions cap and associated rises in permit process. Auctioning also maximises revenue available to government and transfers the onus of paying for carbon emissions to major polluters.<sup>42</sup> Economic modelling is needed to determine the optimum auction-grandfathering mix.

*How long should permits be allocated for? One year or more? And why?*

Annual, short-term permits would primarily be used to satisfy annual relinquishment requirements. Annual distribution and relinquishment would make for administrative ease; however, it could also produce market spikes.<sup>43</sup> In relation to international compatibility it should be noted that annual relinquishment in line with the Australian financial year will not coincide with the European or North American financial years which run from 1 April-30 March.

A long-term permit could provide for GHG emissions at an undefined future time or expire after a set time period.<sup>44</sup> It is recommended that a future expiry date be introduced to limit the hoarding of credits through the banking system. Banking allows participants to hedge on the rate of emissions cap reduction, facilitating compliance with uncertain future reductions.<sup>45</sup>

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<sup>41</sup> Nolles, K., *The importance of market institution in generating prices: A review from experimental economics and implications for real world experience*, Centre for Energy and Environmental Markets, (August 2005), p6

<sup>42</sup> Cramton, P. and Kerr, S., *Tradable Carbon Permit Auctions: How and Why to Auction Not Grandfather*, Discussion Paper 98-34 (May 1998), Resources for the Future, p11

<sup>43</sup> Alignment with the financial year might also be beneficial, although this would be problematic for future links to the EU ETS, as the European financial year runs from 1 May-30 April.

<sup>44</sup> Boemare, C. & Quirion, P., *Implementing Greenhouse Gas Trading in Europe: Lessons from Economic Theory and International Experiences*, (2002) Centre International de Recherche sur l'environnement et le Développement, France, p11

<sup>45</sup> Kruger, J., *Companies and Regulators in Emissions Trading Programs*, February 2005, Discussion Paper 05-03, Resources for the Future, <http://www.rff.or/rff/Documents/RFF-DP-05-03.pdf>, accessed 15 October 2005, p7

However, banking can be problematic in implementing future emissions reductions.<sup>46</sup> It is important that temporal hot spots of GHG emissions are avoided through the expiry of permits after a set time period.<sup>47</sup> Banking may lead to higher permit prices. This may encourage abatement action.

The frequency of permit distribution and surrender must also be considered. It is likely that this will occur annually for administrative simplicity. If so, it is important to note that permit prices are likely to be volatile in the lead-up period.<sup>48</sup> A mixture of short- and long-term permits would be beneficial in reducing volatility.

*How would the method of allocation impact on the operation of the emissions permit market? Would it impact trading and market liquidity?*

Allocation by grandfathering could impact on trading and liquidity. It will depend on the method of grandfathering. Historic emissions, for example, could result in short-term high levels of emissions to establish high emissions usage. Reductions in emissions post-allocation would then create a surplus of permits. However, the market for this surplus would be limited if all participants used this approach. Grandfathering on industry benchmarks would provide liquidity in permits originating from those with low-cost abatement options.

Auctioning is likely to have a limited impact on liquidity, particularly where longer-term permits can be traded as permits may be bought and sold in hedging agreements rather than on the basis of immediate and projected emissions requirements.

*Should existing and new entities be considered differently in allocation of permits?*

One of the major problems with grandfathering relates to new entrants. Either the government must set-aside permits for new entrants in each allocation process or new entrants may risk relatively higher costs in investing in the capped market. This could result in investment moving to States not participating in a cap and trade scheme.

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<sup>46</sup> Boemare, C. & Quirion, P., *Implementing Greenhouse Gas Trading in Europe: Lessons from Economic Theory and International Experiences*, (2002) Centre International de Recherche sur l'environnement et le Développement, France, p10

<sup>47</sup> It is acknowledged, however, that the long life of most GHGs means that this is less problematic than for other ETRs, such as SO<sub>2</sub> and ozone - Boemare, C. & Quirion, P., *Implementing Greenhouse Gas Trading in Europe: Lessons from Economic Theory and International Experiences*, (2002) Centre International de Recherche sur l'environnement et le Développement, France, p10

<sup>48</sup> Nolles, K., *The importance of market institution in generating prices: A review from experimental economics and implications for real world experience*, Centre for Energy and Environmental Markets, (August 2005), p12

*If permits are auctioned or allocated at a fixed cost, to what purpose should the collected revenue be put?*

When carbon emissions have been capped, scarcity rents are created. These rents result from the increased marginal cost of using carbon. Auctions allow governments to use these scarcity rents (which take the form of revenue from the auctioning process in this case) for emitter and consumer cost-abatement.<sup>49</sup> Initial compliance costs and higher marginal costs in some regions and for some participants could be directly targeted or indirectly targeted through tax incentives or reductions.

### **Proposal 7: Penalties**

*While it is recognised that scheme design (eg targets, coverage and offsets) will be key considerations, what penalty level is likely to be needed to achieve significant emission reductions from the stationary energy sector and ensure compliance of liable parties?*

Unless the cost of violation substantially exceeds the cost of compliance there is limited financial incentive to comply.<sup>50</sup> A monetary penalty must be significantly higher than the cost of non-compliance. Where the market is volatile, this is best achieved where the penalty rate is set by reference to a certain amount in excess of the market price. For example, in the OTC NO<sub>x</sub> program penalties were three times the allowance for every ton of excess emissions. The EU ETS the penalty for non-compliance includes both a monetary fine (40 Euro/TCO<sub>2</sub> in the first period and 100 Euro/TCO<sub>2</sub> thereafter) and a requirement for firms to make good the missed emissions reductions the following year. A similar approach is desirable here. Importantly, there also needs to be certainty that a penalty will be imposed in order to encourage compliance.<sup>51</sup> Non-compliance must therefore be a strict liability civil offence. It is possible that a defence such as *force majeure* could be available to participants.

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<sup>49</sup> Boemare, C. & Quirion, P., *Implementing Greenhouse Gas Trading in Europe: Lessons from Economic Theory and International Experiences*, (2002) Centre International de Recherche sur l'environnement et le Développement, France, pp6 & 15

<sup>50</sup> Kruger, J., *Companies and Regulators in Emissions Trading Programs*, February 2005, Discussion Paper 05-03, Resources for the Future, <http://www.rff.org/rff/Documents/REF-DP-05-03.pdf>, accessed 15 October 2005, p13

<sup>51</sup> Kruger, J., *Companies and Regulators in Emissions Trading Programs*, February 2005, Discussion Paper 05-03, Resources for the Future, <http://www.rff.org/rff/Documents/REF-DP-05-03.pdf>, accessed 15 October 2005, p12

*What level of price certainty is desirable? Should a penalty be used to cap prices? If so, what level should it be capped at (for example, how high should a price cap be set in relation to the marginal cost of abatement)?*

Market prices should not be capped. A price cap would allow for the sale of additional permits at the cap price if the cap price were exceeded.<sup>52</sup> Such a scheme would benefit participants but could undermine the efficacy of the system and encourage hoarding to falsely push up prices. A gradual and transparent reduction in the cap should allow ample time for participants to mitigate permit costs.

*What precedents are there for penalty levels in similar schemes (domestic and international)? Should the penalty be set to be consistent with other Australian schemes (eg the Mandatory Renewable Energy Target or the NSW Greenhouse Gas Abatement Scheme)? Should the level of the EU penalty be taken into consideration to allow for possible future linking with the EU trading system?*

The penalty levels that have been set for the MRET and the NSW GGAS scheme are both only marginally higher than the costs of non-compliance with those schemes.<sup>53</sup> Accordingly, they do not operate as effective deterrents to industry. Penalty levels should be set consistently with EU systems provided it is ensured that they significantly exceed the cost of compliance.

*Should there be a make good provision?*

A make good provision, linked to an effective penalty, is supported. This approach has been adopted in the EU ETS. The addition of a make good provision adds additional weight to the financial incentive of compliance with a GHG cap, particularly when linked with an effective penalty regime.

*How should revenue from penalties be used? Should it be used, for example, to purchase emission abatement or invest in low emission technologies?*

Revenue derived from penalties should be reinvested in efforts to reduce GHG emissions. This could be through investing in the development of low emission technologies and through

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<sup>52</sup>Jotzo, F. and Pezzey, J., *Flexible Emissions Targets*, Australian Emissions Trading Form (April/May 2005), [www.aetf.net.au](http://www.aetf.net.au), accessed 19 October 2005, p6

<sup>53</sup> Millar, I “Aspects of Commonwealth and NSW Legislative responses to renewable energy” Paper presented to College of Law 30 May 2003

the provision of incentives for industries that are committed to reducing GHG emissions or developing renewable energy technologies. Revenues could also be invested in public education campaigns. Public education could address the issue of climate change, what government is doing to address the issue, what the public can do to address the issue and the availability of public monitoring tools for the ETR. Demand management strategies could also be addressed through government investment and educational campaigns.

*Should penalties be indexed or internationally linked? How often should they be reviewed?*

If penalties are to remain above compliance costs they would need to be indexed to permit prices. Prices should be monitored year round and the penalty level should be set according to general market trends. In order to ensure certainty for participants, at least two conditions must be met. First, the principles under which penalties are to be set should be stated at the outset. Second, the penalty should be set before any allocation takes place for that.

### **Proposal 8: Offsets**

*What sectors provide opportunity for inclusion through offsets - eg industrial process emissions, sinks and energy efficiency? And is the potential offset a sink or emission abatement?*

Offsets, such as joint implementation (“JI”) clean development mechanisms (“CDM”) and carbon sinks have been incorporated into the Kyoto Protocol as measures to assist with target compliance. Credits generated by additional sources or sinks outside the trading program provide a more diverse range of compliance options which may lead to cost savings. However, these measures should be viewed cautiously. The EU ETS limits the circumstances in which credits can be relied upon to achieve compliance with the scheme. For example, JI/CDM nuclear projects are not recognized until 2012 and land use changes and forestry activities are excluded.<sup>54</sup>

Although Australia is outside the Kyoto framework and will not obtain benefits from JI/CDM projects in developing countries, if this stance were to change, it is important to note that there will ordinarily be a significant time lag in developing, financing and enacting projects. This may affect the certainty of using these credits in the market.

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<sup>54</sup> WWF, *Carbon Countdown: Emissions Trading to combat Climate Change* (2005), <http://www.panda.org/downloads/climate/wwfsummaretsreports071105lowres.pdf>, accessed 10 November 2005,

The discussion paper advocates the use of carbon sequestration and geo-sequestration as measures to offset emissions. Whilst there is scope for using these measures, they should not be treated as the primary way of achieving compliance with an emissions cap. Any proposal to develop plantations or to sequester CO<sub>2</sub> must be considered in the context of the environmental impacts of the project. In some instances, plantation forestry may have adverse impacts upon hydrology and biodiversity. Clear rules would have to be developed around the circumstances in which offsets could be used.

The EDO has previously provided comment on Offsets in a Submission to the Department of Environment and Heritage entitled “*Submission on Biodiversity Certification and Banking in Coastal and Growth Areas*”, September 2005. The paper recommended that offsets be:

- a) Enduring: they must offset the impact of the development for the period that the impact occurs;
- b) Quantifiable: the impacts and benefits must be reliably estimated;
- c) Targeted: they must offset the impacts on a like for like basis e.g. a measure that reduces Carbon Dioxide must be used to offset Carbon Dioxide;
- d) Supplementary: they must be beyond existing requirements and not already being funded under another scheme;
- e) Enforceable: they must be enforceable through development consent conditions, licence conditions, covenants or a contract.

In addition, the use of offsets must be ecologically sustainable in that they do not produce environmental degradation in another area. For example, the use of a hydro-power dam would not be an acceptable offset given the GHG impacts from associated land-clearing.<sup>55</sup>

*What approaches can be used to limit the potential risks of tree planting (terrestrial sinks) such as bushfire and disease? What safeguards should be included to ensure that sinks sequester carbon for an extended period with reasonable certainty?*

The integrity of sequestration credits is directly linked to the time over which the carbon is stored. It is essential for vegetation or forests to be maintained in perpetuity. However, the risks of bushfire and disease are a practical reality in the Australian context. In order to ensure the benefits of credits provided in the short term, it is necessary to link ongoing responsibility

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<sup>55</sup> College of Law, *Aspects of Commonwealth and NSW legislative Responses to Renewable Energy – Renewable Energy and Greenhouse Gas Emissions*, 30 May 2003

for the management of the sink. In this regard, contractual provisions and insurance may be used to ensure performance.

*Should industrial, commercial or residential energy efficiency offsets be included?*

Regulation of emissions from these sectors is currently being done on an ad hoc basis with schemes such as the NSW Basix requirements and environmental planning standards for energy efficiency.

Efficiencies and savings from sectors that are not covered by an ETS do not clearly fall within the offsets contemplated in the Kyoto Protocol. In other schemes, opt in provisions that allow other sources to join the trading regime on a voluntary basis have been used to incorporate commercial and residential sectors. Where emissions from these sectors can be accurately monitored and integrated into an ETS, allowing smaller industries to become involved is supported because it promotes flexibility and efficacy of the scheme in the long-run

## **Proposal 10: New Entrants**

### Early movers

*What criteria should be used to define an 'early mover'? What period of time should be considered in defining an early mover? Which methods of permit allocation advantage or disadvantage early movers? Are additional measures required for early movers under different methods of permit allocation (eg. grandfathering, benchmarking or auctioning)?*

The need to define an 'early mover' will be affected by the form of permit distribution taken. Assuming grandfathering is the predominant form of distribution in the initial stages, where it is based on historical emissions it is crucial to identify and reward those who have taken early abatement action. If industry average or best practice is used, as recommended, early movers will be benefited rather than disadvantaged as they will generally have surplus permits which can be traded for profit. The gradual introduction of auctioning is also likely to advantage early movers as they will require fewer permits and thus reduce expenditure in this way.

*Should early movers be protected from disadvantage and how could this practically be achieved?*

Early movers are protected from disadvantage by the use of a market-based system like ETRs provided the method of allocation is not based on historical emissions.

## New entrants

*Should new entrants have access to the same permit allocation as existing parties? If there are different rules for existing and new entrants, when and how should the differentiation be made?*

Problems are minimised where new entrants enter the market around the time of permit allocation, particularly where permits are allocated on the basis of industry average or best practice and any new entrants have relatively low emissions levels. It will be important to prevent collusion and deliberately manufactured barriers to entry by existing participants, however, as new entrants in this situation would be competing for the same limited number of permits as existing participants.

The government could withhold a number of permits for new entrants. In a predominantly grandfathered system this is needed. New entrants to all markets face some barriers to entry. However, the additional cost of entry in terms of buying scarce permits could be a disincentive to investment in low-emissions technology and its entry into the stationary energy sector. Research into and development of low-emissions technology should be encouraged in conjunction with assistance for new entrants. It is possible that funding could be provided through penalty revenue. Funding could also be raised to aid development of technology for new entrants through permit auctions. Auctioning prevent similar barriers to entry for new entrants.