The Carbon Pollution Reduction Scheme: Green Paper

NSW Government Submission

EXECUTIVE SUMMARY

For many years, NSW has strongly supported the introduction of an Australian emissions trading scheme. In 2003, NSW introduced the world’s first mandatory greenhouse gas emissions trading scheme, the Greenhouse Gas Reduction Scheme (GGAS). As a result of successfully developing and implementing GGAS, NSW has a unique knowledge and skill base in this area. NSW also initiated the National Emissions Trading Taskforce, a collaborative process between States and Territories to design and implement an emissions trading scheme.

NSW, like the Commonwealth Government, has a greenhouse gas emissions reduction target of a 60% reduction on 2000 levels by 2050. This target was formally adopted in the NSW State Plan in 2006. NSW welcomes the introduction of the National Carbon Pollution Reduction Scheme (CPRS) and the opportunity to contribute to its development.

The introduction of a national emissions trading scheme is a landmark reform which will shape the NSW and Australian economies for decades. The CPRS should therefore be designed to attain the challenging greenhouse targets in coming decades as efficiently as possible, minimising economic risks and costs, and distributing them fairly between present and future households and businesses. While the NSW Government naturally has some concerns about the economic risks associated with the implementation of the CPRS, especially in the energy sector, the NSW Government believes these can be managed with appropriate design, and welcomes the transitional assistance measures and risk management instruments outlined in the Green Paper. In particular, maintaining market capacity to invest in new energy technologies will be essential to achieving a smooth transition to a low emission economy. This transition, however, needs to be profound as well as smooth. Delaying emissions reductions will increase the aggregate costs of achieving greenhouse emission reduction targets as well as increasing the risks of a carbon price shock in future decades.

Some of the key issues the NSW Government addresses in this submission to the Commonwealth include:

- The coverage of agriculture, reforestation, deforestation and land use: NSW supports the opt-in of reforestation and the exclusion of deforestation; the Commonwealth working to enhance international accounting rules on land-uses; and the use of offsets for agriculture in the interim while the feasibility of including agriculture in the scheme is being considered;
The coverage of the waste sector: although the waste sector has emission characteristics that do not make it ideal for coverage, NSW nonetheless supports the inclusion of the waste sector and has developed two models for consideration as to how the waste sector could be covered. NSW believes that certain elements of the waste industry meet the criteria to be ‘significantly affected’ industries, but that this could potentially be obviated through the design of coverage rules;

- Emissions-Intensive Trade Exposed (EITE) industry arrangements: NSW broadly supports the proposed EITE provisions, but has concerns about the eligibility for assistance, or adequacy of assistance for sectors of importance to the NSW economy such as agriculture, pulp and paper making and coal mining;

- Strongly affected industries: NSW supports the provision of assistance to existing coal-fired generators, and seeks involvement in any final decision on the quantum involved.

- Investment in Research, Development and Innovation (RDI) and Infrastructure: major on-going investment to accelerate RDI and fund low-emissions infrastructure is going to be required to meet greenhouse targets at least-cost in the medium term. NSW would like to see an on-going allocation of permit revenue to RDI and infrastructure from the outset of the CPRS.

- The location of CPRS institutions: if Australia is to successfully compete to be the carbon trading hub for the Asia-Pacific region, it must consolidate regulatory and administrative infrastructure in Sydney where there is already a critical mass of financial services and carbon trading expertise.

- GGAS Transition: The Commonwealth and NSW must work together to ensure a fair and efficient transition.

It is vital to get the design of the CPRS right. NSW looks forward to working with the Commonwealth to do so.

**THE CARBON POLLUTION REDUCTION SCHEME**

The NSW submission is organised into comments on issues as they arise chapter-by-chapter in the Green Paper.

**Chapter 2 Coverage**

NSW believes the coverage of the scheme should be as wide as practical, as this will be the most efficient and fairest way of cutting greenhouse gas emissions. Exempting sectors potentially reduces scheme participants’ access to cost-effective sources of abatement, increasing the costs for the remaining businesses covered by the scheme and for the community. Coverage should be broad, subject to the limitation that transactions costs must not form a significant proportion of abatement costs. Economic efficiency, risk management and distributional equity should also be considered.
NSW supports the coverage proposals of the CPRS on the basis of these principles. However, the inclusion of some sectors will need to be carefully managed.

FUGITIVE EMISSIONS

The Green Paper’s preferred option is to include all fugitive emissions from coal mines, including those from open cut coal mines, on the commencement of the scheme.

Fugitive emissions from underground coal mines are better able to be measured, captured and utilised than are those from open-cut mines. If underground and open cut mines are treated equally under the scheme, underground mines would be advantaged relative to open-cut mines. NSW seeks clarification as to whether underground and open-cut mines will be treated equally, or whether some mechanism to accommodate differences in technical capacity for abatement will be developed.

Fugitive emissions from derelict or decommissioned mines can continue after mining operations have ceased. The Green Paper acknowledges this as a significant issue, but it is unclear how emissions from such mines will be dealt with under the scheme. Options include to cover derelict or decommissioned mines (subject to transaction costs) in the CPRS, exclude them and develop an offsets scheme encouraging companies to capture and utilise fugitive emissions from decommissioned mines, or complementary measures. The Green Paper indicates further consultation will take place on this issue. NSW would like to be involved in the analysis and consultation to identify an appropriate treatment for decommissioned mines.

AGRICULTURE, REFORESTATION, DEFORESTATION AND LAND USE

Agriculture

NSW supports the proposal to postpone the decision on whether or not to cover agriculture in the CPRS.

Timing

It is not clear from the Green Paper whether the decision on covering agriculture will be made in 2013 or by 2013. NSW would like clarity to provide certainty for the agricultural sector.

Interim measures

Delaying coverage until at least 2015 leaves a considerable period in which there may be no incentives in place to encourage abatement of agricultural emissions. Given the magnitude of emissions from agriculture (approximately 15% of Australia’s total emissions in 2006), and the potentially significant impacts on agriculture from inclusion in the CPRS, every effort should be made to find complementary measures prior to 2015. NSW acknowledges there are policy and administrative challenges involved in
developing complementary measures for agriculture, and is willing to work with the Commonwealth and other States and Territories in the development of such measures.

Complementary measures for agriculture should have two policy objectives. First, increased adoption of best management practices. Many available technologies, for example, may not have been adopted because some farmers do not have the relevant information, do not have the skills to apply those technologies in a profitable manner, or face poor market signals in relation to those on-farm practices that have the potential to directly attract market premiums from consumers, or financial support from the broader public.

Second, reducing the cost of mitigation through the development of a wider range of farm level mitigation strategies and low emissions enterprises, and in so doing, minimise the impacts on profitability, food production, market share, and the costs of agriculture’s possible future inclusion in the CPRS.

Whether abatement is driven by the inclusion of agriculture in the scheme or by some other policy measure, substantial research and development is needed to improve the capacity of the sector to reduce emissions. Specific needs include:

- developing a wider range of on-farm abatement strategies, particularly for methane from ruminant animals, but also for nitrous oxide emissions and sequestration of carbon in soils – including new technologies for long term carbon sequestration, such as biochar;
- refining emissions estimate and verification methods; and
- improving farmers’ access to available abatement technologies and practices.

Work has been underway in each of these areas for a number of years now, but progress has been very limited to date, particularly in the area of ruminant methane control. Work in this area needs to be accelerated and will require significant financial commitment if agriculture is to make a meaningful, economically sustainable contribution to meeting emissions targets in the longer term.

*Points of liability*

NSW broadly supports the concept of aggregated liability, while recognising the trade-off between minimising transaction costs and providing incentives for mitigation by individual farmers. Enabling on-farm accreditation and allowing large emitters to manage their own emissions is supported to encourage on-farm abatement practices. Further innovation is required in systems to measure and verify emissions at least possible cost, which requires further R&D as a matter of priority. NSW has expertise to contribute to this aspect of scheme design.
Offsets

The issues surrounding the development of offset credits in the agricultural sector are substantial, as acknowledged in the Green Paper. However, these issues are not insurmountable.

There are likely to be some conditions under which offsets from agriculture are administratively straightforward, provide low-cost abatement and will not cause difficulties later if agriculture becomes a covered sector. In fact it could be argued that the additional revenue generated from offsets before 2015 could provide capital to assist small operations in implementation of the scheme, while also providing additional incentives to reduce their carbon liability before their CPRS obligations take effect.

Exclusion of changes in soil carbon limits the options available to farmers to minimise their costs under the CPRS such as for energy, fuel and fertiliser. It also limits the extent of other positive economic and environmental benefits that are associated with increasing levels of soil carbon (reduced erosion, improved water quality, improved farm productivity and resilience).

Further consideration is required about the shape of international accounting rules and Australia’s coverage under optional elements beyond 2012.

NSW strongly supports leaving open the option of developing offsets from the sector and actively seeking opportunities. NSW has expertise arising from its experience with agricultural production systems and the NSW Greenhouse Gas Reduction Scheme, and is willing to share this with the Commonwealth.

Land Use

Coverage

NSW notes that it is not proposed to include in the CPRS sources of emissions and carbon capture and storage methods that are not currently covered in the international accounting approaches. In particular, it is not proposed to cover the land uses that Australia opted not to count in our Kyoto Protocol commitments: forest management, grazing land management, cropland management and non-forest revegetation.

This excludes important opportunities for sequestration such as soil carbon in farming systems, revegetation with non-Kyoto vegetation (for example low and sparse vegetation and land cleared post 1990) and management of Australia’s remaining native vegetation. There may also be scope to go beyond previously defined sequestration opportunities to include potential carbon storage in other forms such as algae and biochar.

Negotiations on the second commitment period of the Kyoto Protocol (or a successor agreement) provide an opportunity to renegotiate and enhance the accounting rules and have these sources of emissions and removals included in Australia’s international
commitments. It is essential that Australia consider these issues in time for the second commitment period.

NSW therefore supports the position in the Green Paper that Australia should increase its efforts to change the international accounting framework in ways that reflect Australia’s particular circumstances. Specifically, work needs to be done to enable international accounting of reservoirs of carbon in agricultural soils, non-Kyoto vegetation and managed forests. The CPRS rules need to be sufficiently flexible to incorporate changing international accounting rules.

Complementary measures should be investigated to promote sequestration in non-covered land uses prior to their coverage by the international accounting rules and the CPRS, such as participation in voluntary carbon markets. These activities will assist the development of practical estimation methods and administrative arrangements.

Reforestation/Forestry

Coverage

NSW supports opt-in coverage for reforestation. NSW also supports the principle that the CPRS cover greenhouse emissions only and that other measures be used to monitor and regulate biodiversity and water impacts.

Transaction costs

To maximise participation in the scheme, NSW advocates keeping the transactions costs to a minimum, without compromising the integrity of the scheme. More specifically, the following deserve consideration:

- Spatial data: The identification of forests that opt-in to the scheme should be flexible enough to facilitate participation of sub-parcels of land.
- Acquittal periods: Costs could be reduced by extending acquittal periods and enabling average carbon stock approaches.
- Transactions: The scheme should enable carbon pooling and agents to act on behalf of scheme participants.
- Land title: Land holders who have opted-in should be able to pass on the asset/liability with the land. Leasehold properties, including crown leases, should not be excluded from the scheme.

Accounting

Australia’s reservoir of harvested wood products is growing however the international accounting rules assume that all reservoirs of harvested wood products are static, i.e. the pool of wood decomposes at the same rate that it is harvested. Current international
thinking recognises that this assumption is incorrect. Taking into account the store of carbon in harvested wood products in Australia could increase the carbon sequestration estimates from reforestation. This would in turn reduce Australia’s estimated emissions and could provide additional incentive for reforestation if it were counted in the CPRS.

Discussion has started internationally on how the rules could be changed to reflect current research on harvested wood products. Australia should take a leading role in these discussions to ensure that these changes can be incorporated into the CPRS as soon as possible.

Deforestation

NSW agrees with the Commonwealth’s assessment that including emissions from deforestation within the scheme would duplicate the role of State-based land clearing legislation. However, it is acknowledged that there are still significant emissions from land clearing and complementary measures will be necessary to reduce emissions.

NSW supports the suggestion that incentive-based mechanisms be investigated for avoided deforestation.

TRANSPORT

NSW supports the inclusion of the transport sector in the CPRS and believes the CPRS should operate uniformly across transport modes. Transport is the third largest source of emissions, and an equitable and efficient scheme must therefore include the transport sector.

NSW is mindful of the financial stresses the community is experiencing due to recent increases in petrol prices, and notes the Green Paper proposes an adjustment to the fuel excise to offset the impact of permit prices until 2013.

It is important that the adjustment in the fuel excise does not introduce any distortions which would militate against the intent of the CPRS to induce substitution towards lower-emissions modes of transport or fuels.

NSW seeks confirmation that the fuel excise adjustment will be fuel-neutral (and not impact on the relative cost of biofuels).

Clarification is also sought on the application of the proposed measures for on-road business users and heavy vehicles. Under existing arrangements, heavy vehicles pay fuel tax up to the amount of the road user component of the charge with the remainder offset by a fuel tax credit. If the offset for the impact of the CPRS on fuel prices is to apply to the road user charge, this could inadvertently favour road over rail freight unless there is an equivalent compensatory offset for rail.

NSW also seeks clarification that the funds for the cent-by-cent offset on the price of transport fuel will be obtained from permit revenue rather than the road user charges. If
compensation for heavy vehicle operators is to be obtained from road user charges, this could have implications for the funding of NSW infrastructure.

The implications of the excise provisions for domestic coastal shipping companies should also be considered.

The proposed treatment of fuel excise also means that in the short-term the cost of operating electrified passenger rail services is likely to increase relative to road transport creating a perverse (but short-term) incentive in favour of car use.

That said, NSW notes the quantum of the fuel excise adjustment is not expected to be large in the early years of the CPRS, and a review of the excise arrangements is scheduled to take place in 2013. NSW also seeks clarification as to whether the review will consider the ‘mechanism’ or the policy of offsetting the impact of permit prices on transport fuel.

In addition, NSW considers that the interactions between the taxation system and the CPRS should be fully considered in the Henry Review to ensure there are no longer-term distortions towards higher-emissions modes of transport or fuels.

NSW supports measures which improve fuel efficiency and access to lower-emissions forms of transport as the most effective way in the medium term to reduce greenhouse gas emissions and alleviate financial stresses being experienced by motorists. The failure of the previous Commonwealth Government to introduce vehicle fuel efficiency standards has left many motorists exposed unnecessarily to high fuel prices.

WASTE

The Green Paper proposes making landfill facilities liable parties, either with a threshold of 25 kt CO-2e, or a dual threshold with a lower 10kt CO-2e per annum threshold for landfills in urban centres and surrounding areas. In principle, NSW supports the inclusion of the waste sector in the CPRS, but to be effective scheme design will need to address a number of complex issues as follows.

1. **Scope of Coverage**

   *Level and form of the emissions threshold for the inclusion of landfills in the CPRS?*

   The threshold for inclusion needs to be set with consideration given to the following factors:

   - Transaction costs: if the threshold is set too low, the transaction costs will outweigh the greenhouse benefits. NSW has 436 landfills, but more than 85% of the waste generated each year in NSW is disposed of in only 25% of the landfills.
• Perverse incentives: if the threshold is set too high, it could create perverse incentives for the diversion of waste to sub-threshold landfills and for the proliferation of small landfills.

NSW supports setting a uniform threshold at 10,000 tonnes of waste per annum, to apply in all areas. This would cover approximately 85% of potential future emissions in NSW, while impacting on only 25% of landfills (~100 in NSW). Furthermore, relative to a 25,000 tonne threshold, it is not expected that this would lead to significantly higher transaction costs (it only encompasses a further 30 landfills), and would minimise perverse outcomes.

NSW supports a coverage threshold being expressed in tonnes of waste to simplify implementation and landfill compliance.

The potential for waste to be displaced from covered to uncovered landfills, and for new landfills to evade coverage, also exists in regional centres. NSW therefore supports a uniform coverage threshold for urban and regional areas.

Should closed landfills be covered by the CPRS?

NSW does not support closed landfills being covered under the CPRS. Whilst NSW supports the principle that landfill operators ought to be responsible for their emissions, the most cost effective means of mitigating emissions from closed landfills is by mandating gas capture. Covering closed landfills would create an incentive for gas capture. However, it also unfairly imposes a liability for emissions that cannot be captured due to the technical limitations of gas capture technology. Accordingly, NSW suggests State and Territory Governments should, in consultation with the Commonwealth, investigate the practicality of mandating gas capture at closed landfills.

Should emissions from pre-scheme waste be covered?

As acknowledged in the Green Paper, the issue of pre-scheme waste is a complicated matter. Waste can take up to 50 years to decompose, with emissions from waste disposed in the preceding 5 to 10 years usually dominating the emissions profile for the next 5 to 10 years. The exclusion of legacy waste would therefore excise a significant proportion of emissions from the CPRS and could also encourage the premature closure of landfills.

However, the inclusion of legacy waste would disproportionately affect two types of landfill (and therefore have an impact on industry competition):

- Landfills with above-average volumes of legacy waste in Sydney. In Sydney, the waste industry is highly price-competitive so these landfills will have limited capacity to pass on additional costs to consumers.1

1 Outside Sydney, in areas where there is public management of landfills and limited competition, local authorities who operate the landfills will be able to recover these costs from users.
Large landfills (in Sydney and other areas) that are close to ending their operational life. These landfills will have an ongoing post-closure liability, but no capacity to recover any of the costs of post-closure emissions.

The inclusion of legacy waste could therefore have a differential impact on landfill operators with the same emissions intensity per tonne of additional waste in landfill, but different emissions profiles due to different landfill size. The disproportionate impact on different landfills needs to be considered and may form the basis for compensation.

On balance, NSW therefore supports either covering all emissions from operating landfills and compensating landfills with large volumes of legacy waste to maintain a level-playing field, or excluding legacy waste emissions and addressing these emissions via mandatory gas management.

NSW supports further consideration being given to this issue.

2. Determining the emissions of liable landfills

The issue of determining emissions, and therefore the coverage threshold and permit liability, of landfills is particularly challenging. The estimation method should be as accurate as possible, while being both affordable and verifiable.

How will landfill emissions be determined (direct sampling, ongoing measurement, first order decay estimates, waste stream and/or waste type conversion factors)?

Direct measurement can be done through samples or continuous flow measurement. Sampling based methods are currently used in some situations, but they are not particularly accurate and very hard to verify due to a myriad of factors (e.g. variability in waste composition). Continuous flow measurement has the potential to be more accurate in the long term. NSW supports the scheme design rules specifying the use of waste emissions factors until the maturation of continuous flow technologies, either modelled or simple depending on the scheme design details.

There are technical advantages and disadvantages associated with either modelled or simple waste emission factors. For example:

- emissions liability would be very low for many years if the first order decay model is coupled with a coverage model that excludes emissions from waste disposed pre scheme commencement;
- the first order decay model requires historical records of waste disposal that are frequently non-existent; and
- there will also be transitional issues moving from factors based emissions estimates to a direct measurement based emissions estimates.
How will the permit liability of landfills be discounted by gas capture (direct measurement, back calculate energy generation, capture rate deemed by the regulator)?

Direct measurement of gas capture and treatment will provide an incentive to maximise its operational efficiency. NSW supports direct measurement of methane destruction where this is technically possible and can be audited (e.g. metered flares and electricity generation) and a deemed gas capture rate by the regulator where auditable, direct measurement is not possible (e.g. biofiltration).

Metered gas capture discounting may not be possible if the scheme does not cover ‘old’ waste, as it would be difficult to differentiate between ‘old’ and ‘new’ waste emissions. In this case a deemed capture rate would be preferable.

3. How will compliance be ensured?

The challenges of compliance could be significant as there will be increasing financial incentive to minimise liability. NSW has had considerable experience in this area in ensuring compliance with the NSW waste and environment levy. The NSW Department of Environment and Climate Change is available to provide advice in this area if required.

4. The role of complementary measures

Complementary measures should be considered for waste emissions that are not covered by the scheme, including waste water treatment, incineration and non-covered emissions from landfills. NSW supports mandating gas management at non-covered landfills, which will drive further abatement and minimise any perverse outcomes from the threshold. It is acknowledged that there will be practical limits that will need to be considered in detail by State and Territory Governments in consultation with the Commonwealth.

It is also important to note that there are at present technical limits to the abatement that can be achieved by the capture and treatment of landfill gas. The Intergovernmental Panel on Climate Change has observed gas capture efficiencies ranging from 10% to 85%. Once a landfill has installed efficient gas capture and treatment, further abatement can only occur by diverting waste from landfill to alternatives such as composting, pyrolysis, re-use and recycling. The permit price on the remaining gas, along with the cost of installing gas capture, will in most circumstances be added to the gate fee creating an incentive for diversion. However, due to non-price barriers and low price elasticity, there is likely to be a significant time lag when the permit price reaches the marginal cost of abatement, and when diversion activities commence. Complementary measures should be considered to encourage cost-effective diversion of waste from landfill.

In summary, NSW recommends the consideration of two different models for the inclusion of the waste sector in the CPRS.
### Table 1: Options for the Inclusion of the Waste Sector

<table>
<thead>
<tr>
<th>Coverage Option</th>
<th>Closed Landfills</th>
<th>Industry Impact</th>
<th>Measurement Measure</th>
<th>Complementary Measure</th>
</tr>
</thead>
<tbody>
<tr>
<td>All emissions from operating landfills.</td>
<td>Excluded</td>
<td>Possible case for compensation for landfills with a lot of old waste.</td>
<td>First order decay method for emissions minus measured methane destruction.</td>
<td>Gas management for closed and below threshold landfills.</td>
</tr>
</tbody>
</table>

NSW is available to discuss these issues further or make a more detailed submission.

**Chapter 3 Carbon Market**

The Green Paper proposes a scheme price cap from 2010-11 to 2014-15. As the Green Paper acknowledges, there are significant drawbacks with a price cap. First, it allows breaches of the scheme cap (which will create a liability for the Commonwealth to meet any shortfall in meeting international obligations). Second, it may also slow the development of private sector risk instruments as it transfers risk away from liable parties. The carbon trading market is expected by the financial sector to function like other commodity markets and instruments for managing risk will develop here as elsewhere in the absence of a price cap. Third, a price cap could inhibit the development of international linkages.

NSW accepts that a price cap as a safeguard against extreme price volatility in the Scheme’s early years, subject to review, is a reasonable compromise. However, as the Green Paper notes, there are other ways of managing up-side price risk.

NSW supports the removal of any price cap at the earliest, feasible point, and thereafter, a make-good provision to enhance the environmental integrity of the scheme and enhance the potential for linkages to other trading schemes.

**Chapter 4 Emissions Targets and Scheme Caps**

Until the economic modelling is completed, NSW cannot provide detailed comment on scheme targets, trajectories and caps. NSW would welcome the opportunity for further consultation with the Commonwealth Government at that time. NSW considers that the Commonwealth’s White Paper and the exposure draft of associated legislation should take into account the outcomes of these discussions.
However, in setting the targets, trajectories and caps, NSW believes the following criteria should apply:

- The scheme design should provide the maximum possible confidence to investors, but also recognise that the Commonwealth may need to adjust the scheme’s parameters as a result of international agreements and/or greater understanding of the science, likely impacts of climate change and the scope of adaptation potential. As such, the scheme should set out a framework that identifies an appropriate sharing of risk between the Commonwealth, scheme participants and other affected parties, to be applied if and when scheme parameters need to be altered with significant impact;

- Design of scheme caps must aim for an emissions reduction trajectory that is consistent with a 60% or greater reduction on 2000 level emissions by 2050, and international commitments. It should also take into account the reductions adopted by other countries. One way of achieving this could be the approach proposed in the Garnaut Review; that is, setting out more stringent emissions reduction trajectories which would be adopted in the context of effective international agreement; and

- The scheme cap, targets and trajectory will need to balance the need for a smooth, orderly transition to a carbon-constrained economy with the need to minimise longer-term costs and risks by distributing the emissions reduction task over a longer time frame.

NSW will provide further comment on this element of the scheme once the modelling, trajectories and targets have been released.

Chapter 5  Reporting and Compliance

NSW reserves comment on the reporting and compliance arrangements for intergovernmental consultations on the National Greenhouse and Energy Reporting System.

Chapter 6  Linking the Scheme to International Markets

The NSW Government supports the development of linkages with international schemes subject to the quality of their scheme governance (including clarity of property rights and environmental integrity). NSW agrees with the Green Paper’s assessment of the benefits of linkages with international schemes, and further notes the benefits of integration for accelerating the development of Australian carbon trading markets, but accepts the proposed limitations to minimise implementation and carbon price shock risk.

NSW also notes international linking is a key issue which needs rigorous data and analysis as the balance and mix of interests is complex. This analysis should be included in the Commonwealth Treasury’s modelling work as a matter of urgency.
There is one issue on which NSW seeks clarification. It is unclear whether the CPRS will allow Joint Implementation (JI) projects being hosted in Australia for forests that have not opted in to the CPRS. Once other relevant limitations on integration with international markets are relaxed, NSW supports the capacity to host JI projects in non-covered forests.

Chapter 7 Auctioning of Australian Carbon Pollution Permits

The Green Paper proposes to allocate up to 20 per cent of permits (30 per cent if agriculture is to be included), and auction the remainder of permits.

Whatever the design of the auction process at the outset of the scheme, a mechanism for reviewing its design should be established to allow redesign should implementation outcomes be inconsistent with design criteria and objectives.

Chapter 8 Household Assistance Measures

NSW supports the initial use of all the permit auction revenue to assist households and businesses adjust to the CPRS.

In framing assistance for households, there are a number of general design principles which NSW believe should be paramount:

- Adjustment assistance should be focused on the most vulnerable groups – that is those who will suffer the most disproportionate adverse impacts and who have the least capacity to mitigate or adjust to those impacts;
- NSW agrees that direct financial assistance should not vary according to a households’ actual energy consumption. Cost effective measures which help households adapt by using less energy should also be implemented. Energy efficiency measures often have a lag so they cannot obviate the need for assistance from the outset of the CPRS. However, helping households become more energy efficient is a more effective way in the medium and long-term of assisting them to manage the budgetary effects of rising permit prices. Cost-effective energy efficiency measures will also lower the price of permits. The NSW Government is implementing a $150 million energy efficiency strategy aimed (in part) at delivering these types of outcomes in NSW; and
- The funding of adjustment assistance for households and businesses today needs to be balanced against investments in energy efficiency, RDI and infrastructure which have the potential to lower the costs of the CPRS for households and businesses in the future. As the draft report of the Garnaut Review notes, addressing market failures which inhibit the development and deployment of low emissions technologies will substantially lower the overall cost of reducing emissions. Over time, as the economy adjusts, NSW would like consideration to be given to some of the household (and business) assistance being transferred into these uses. These issues are discussed further in relation to the Climate Change Action Fund.
The CPRS could also have significant impacts on the revenue of State Governments’, and therefore their ability to deliver services to households which are their jurisdictional responsibility. NSW recognises that government agencies must become more energy efficient, as well as industry and the community, and that the carbon price signal is an important incentive for greater efficiency. To that end, NSW is investing heavily in energy efficiency measures for government agencies. However, NSW would stress the importance of a full consideration by the Henry Review of the interaction between the CPRS and taxation, including the impact on the revenue of State Governments.’

Chapter 9 Assistance to Emissions-Intensive Trade-Exposed Industries

Designing assistance for emissions-intensive trade-exposed (EITE) industries is a complex matter, which requires reconciling a number of different objectives such as:

- preventing ‘carbon leakage’ which results in local economic loss for no environmental gain;
- maintaining incentives for greenhouse abatement in EITE industries, not only to fairly distribute emissions reduction between industries, but also to maintain the competitiveness of EITE industries in the carbon-constrained economy of future decades. Genuine carbon leakage must be avoided, as this imposes an extremely high cost on Australia, and NSW is concerned EITE assistance be designed to ensure it remains an attractive location for investment in EITE industries. However, the scheme should also be designed to avoid protecting EITE industries in the longer term if those industries are genuinely non-competitive based on their carbon intensity relative to that of their competitors;
- maintaining the integrity of the CPRS, and the effectiveness and efficiency of the carbon market, whilst providing assistance for activities that represent a large percentage of Australia’s greenhouse gas emissions; and
- the optimal use of assistance (revenue and permits) for least-cost abatement in the medium and long-term.

NSW is broadly satisfied that the proposed EITE arrangements address these objectives. Using an industry average as the baseline for determining assistance will reward firms that have already taken action to reduce their emissions below the average, and encourage those that have not, to do so. Unlimited banking and the allocation of permits should encourage further early abatement in the EITEs. The Green Paper makes clear that EITE assistance will need to be balanced against their impact on non-assisted industries and households. Support for EITE industries over the longer term is also recognised as unsustainable as it will affect the overall credibility of longer-term targets.

However, NSW has concerns about some specific aspects of the EITE arrangements:

- The Green Paper recommends up to 30 per cent of permits (if agriculture is included) be allocated free to EITE activities, and that up to 10 per cent be reserved for agriculture. However, there is little detail about the proposed distribution
arrangements, and the Green Paper proposes to defer any consideration of EITE assistance to agriculture until decisions are made with respect to scheme coverage. The proposed EITE guidelines also provide for a reduction in the total emissions cap over time and for assistance to EITE activities to be reduced at a similar rate. It will be important that all EITE activities receive equivalent treatment, and that if agriculture is included in the scheme, it is not disadvantaged as a result of its phased inclusion into the CPRS.

- Using just two years data (2006-07, 07-08) is too narrow a base for calculating eligibility for EITE assistance, especially in view of the extremely strong growth in commodity prices over recent years.

- The eligibility for assistance and adequacy of assistance for particular NSW sectors:

  **Coal mining:** The chart (Figure 9.2) on page 313 calculates the emissions intensity of coal mining at between 1500 and 2000t CO₂e [1,722 t/$m]. The rise in coal prices has deflated the emissions intensity of coal. Partial compensation only would place Australian coal producers at a disadvantage in relation to other coal exporting countries which are not subject to a carbon price such as China, Russia, Indonesia and India.

  Additionally, due to current differences in the technical potential to measure and capture fugitive emissions between open-cut and underground mining, the two types of mining have a different level of emissions intensity. If they are considered as the one activity, for a given level of output, both will receive the same number of permits, but the underground mining firm will need to acquit fewer permits than an open cut competitor.

  **Minerals:** The impact on gold producers can be illustrated through the example of Cadia Valley Operations. The Cadia Valley Operations is the largest producer of gold in NSW. Newcrest Mining Ltd, mine operator, has released its gold production costs for the Cadia Hill open cut mine and the Ridgeway underground mine within its June 2008 quarterly report. The company has indicated that the site operating costs (not including copper credits) for 2007-08 were $675 (Aus) per ounce at Cadia Hill and $376 (Aus) per ounce at Ridgeway. These figures do not include Royalty (which was $36/oz and $51/oz respectively) or third party smelting, refining and transporting costs ($99/oz and $143/oz respectively). Nor do they include depreciation or amortisation charges.

  The average annual historical Australian dollar gold price since 1991-92 is close to around $530-540 per ounce. If the commodity price moves back to historical averages, the Cadia Hill open cut mine will become unviable and the Ridgeway underground mine becomes questionable. Additional costs imposed on these operations under a cap and trade system will make these operations untenable.

  **Pulp and paper.** If it were to be considered as a sector, Pulp and Paper may only just qualify for EITE assistance, and would only be eligible for assistance for 60% of its emissions. However, if the pulp and paper industry is further sub-divided on an activity basis, some activities within the sector are likely to fall just short of the lower
emissions intensity threshold of 1,500 tonnes of CO$_2$–e per million dollars of revenue, while others like mechanical pulp and paper making may exceed the higher emissions intensity threshold (2,000 tonnes of CO$_2$–e per million dollars of revenue). This would leave activities which do not meet the threshold highly exposed.

Using revenue as the measure for EITE assistance is likely to create perverse incentive for pulp and paper companies. For example, chemically produced pulp represents about half the value added of the final paper product, but produces very few emissions while converting pulp to paper accounts for the remaining half of the value and accounts for nearly all the emissions and most of the jobs. For companies looking to reduce their emissions exposure, transferring their paper making activities to another country (one that is not subject to a carbon price) is a logical solution but a perverse outcome for Australia. On this basis, the pulp and paper industry advocates the use of ‘value added’ as the basis for EITE assistance, rather than revenue, or to define pulp-to-paper as the ‘activity’ and it be treated as a sector.

In raising these issues, NSW acknowledges that setting an emissions intensity threshold as the basis for assistance is inherently arbitrary, leading to the inclusion and exclusion of different activities potentially on the basis of modest differences in emissions intensity. NSW recommends consideration of additional ‘tiers’ of eligibility in order to reduce the extent of unintended arbitrary consequences.

Accordingly, NSW also requests that the results of economic modelling on the impacts on particular sectors and sub-sectors of the CPRS be made available once completed.

The Green Paper also presents three options in relation to the phase-out of assistance for EITE’s. NSW supports option 1; the removal of assistance should only be withdrawn when broadly comparable carbon constraints are introduced in competitor economies.

**Chapter 10 Strongly Affected Industries**

One of the three objectives for the CPRS identified in the Green Paper is to “provide for transitional assistance for the most affected households and firms”. NSW welcomes this recognition and emphasis. Furthermore, one of the assessment criteria for design options is “the minimisation of implementation risk”. NSW strongly endorses this emphasis on risk management, in particular the commitment of the Commonwealth to addressing the impact of the CPRS on “strongly affected industries”.

The broad approach set out the Green Paper is endorsed, and the following comment is largely on points of detail. NSW endorses the Commonwealth’s preferred position for defining strongly affected industries, and the eligibility criteria for the receipt of “direct assistance” (compensation), in particular entities that “could experience significant losses in asset value” (p345). However, because the Commonwealth Treasury modelling is not expected to be released until sometime in October the comments in this section are necessarily qualified. NSW reserves the right to change its position from that expressed here in response to the Commonwealth’s modelling. It is essential that stakeholders are
given full access to the modelling methodology, along with all of the numerical assumptions and outputs, to provide feedback to the Commonwealth prior to any scheme design decisions being locked in.

The Green Paper lists electricity generation, waste, the production of natural gas and gas supply as ‘possible strongly affected industries.’ NSW wishes to comment on the waste and electricity generation sectors.

**Electricity Generation**

The Green Paper correctly recognises that some coal fired generators could experience significant losses in asset value, and will satisfy the eligibility criteria. Transitional direct assistance will be required for such generators. But, as the Green Paper observes (p362), assistance measures “are not necessarily intended to keep particular facilities operating in an unchanged manner, or to support their financial position indefinitely where that runs counter to the long-run abatement imperatives”.

In considering how that assistance should be determined, the paper recognises that value loss for some entities could be exacerbated where there are long-term contracts in place that prevent the pass through of carbon costs (p344). To the extent that these contracts impact on individual entities differently they may need assistance or action separately to the general assistance measures for strongly affected industries.

As recognised in the Green Paper, the appropriate transitional assistance to eligible generators will depend on some of the design parameters, in particular the trajectories and targets. Those are yet to be determined, and the NSW government looks forward to finalising discussions on the provision of direct assistance when the details of the scheme have been resolved.

**MRET**

The MRET scheme that is being implemented ahead of the CPRS is intended to drive investment in renewable electricity generation capacities. The impact of the MRET on the CPRS should be carefully considered, because it will be driving significant changes to the same markets and market participants that will be affected by this scheme. Key links are:

- Maximising investment confidence - a critical issue for NSW in particular, because of the impending need for additional base load generation capacity.

- The extent of trade and capital flows - investment capital is highly mobile and competition for investment dollars will continue to be fierce. Capital will gravitate towards opportunities that offer the most attractive trade off between risk and expected returns.
• Operational dislocation - periods of unreliable electricity supply associated with the implementation of the CPRS and MRET would also discourage investors and have broader economic impacts.

• Direct assistance - While the CPRS and MRET will change the incentives for investment in various technology types, the aim of providing direct assistance to high emission generators should be to avoid reductions in their underlying investment capacity, and to minimise sovereign risk for existing and new investors and their financiers.

**Investor Confidence**

The NEM’s ability to deliver new capacity is going to be critical over the next few years. This is the first significant test of market based investment in major base load capacity. In addition to the renewable capacity requirements driven by the CPRS and MRET schemes, ongoing investment is required to meet electricity demand growth.

The preferred position in the Green Paper for dealing with the setting and adjustment of key scheme parameters, including the abatement trajectory, is a reasonable approach that is designed to narrow the range of regulatory uncertainty and help predictability. However, the commencement of the CPRS will only eliminate one element of uncertainty. In view of the environmental, scientific, economic and international forces that will impact on the evolution of the CPRS, policy uncertainty cannot be wholly eliminated. Investors will be looking for reasonable assurance that if they do commit to investing in sunk assets, they will be shielded from the imposition of disproportionate costs in an evolving policy environment. As the Green Paper acknowledges (p.370), failure to provide adequate direct assistance to emissions intensive generators at the commencement of the scheme will send the opposite signal and ‘increase risk assessments for future investments in the industry’.

Failure to provide direct assistance to strongly affected industries that have previously invested in good faith sends a strong sovereign risk message to prospective investors, regardless of whether they intend investing in fossil-fuel or renewable energy plant. Conversely, addressing disproportionate value impacts would encourage the long-term commitment required for investment in the industry. The earlier that new capacity is commissioned, the smaller the risk of insufficient reserve margins and supply unreliability.

**Energy Security**

The AEMC review of energy market frameworks is to consider the possible impacts of the CPRS on energy security (p364). NSW supports this review, but believes risks to energy security from the CPRS implementation should first and foremost be addressed through the design and implementation of the CPRS.
NSW agrees with the Green Paper that there will be a relationship between emission trajectories and other scheme parameters and energy security that will be mediated through the permit price. The proposed measured approach to the implementation of the CPRS is supported in principle. But this alone will not be sufficient.

There are three potential financial impacts from the CPRS on coal-fired generators:

(i) a loss of asset value upon announcement of CPRS design;
(ii) an increase in cost of capital impacting on their capacity to invest; and
(iii) the requirement for significant additional capital for permit purchases (at $20 per tonne of CO2, the annual cost to generators nationally of covering all existing emissions would be over $4 billion).

NSW agrees with the Green Paper that the risk of early retirement of generators is subject to mitigating factors, but all things being equal, it increases its likelihood. It is not certain that there will be no impact on the supply capacity of the industry, and there is a non trivial risk of consequential impacts on energy security. Electricity is a unique commodity. It has to be manufactured at the moment of its consumption through a capital intensive process, and is characterised by significant and complex network related issues that require ongoing centralised control and regulatory oversight. Investment lead times are typically long. For these reasons, investment decisions need to be made well in advance of the delivery of capacity to the market. Given the high cost of unreliability, risk aversion is appropriate in dealing with the electricity sector.

**Level and Distribution of Transitional Assistance**

NSW supports providing transitional assistance to address disproportionate loss. Equally, windfall gains should be avoided, and conditionality options for direct assistance should be further explored. While the CPRS and MRET will change the incentives for investment in various technology types, the aim of providing direct assistance to high emission generators should be to maintain their underlying investment capacity, and to minimise sovereign risk for existing and new investors and their financiers.

NSW supports defining disproportionate loss relative to an economy-wide benchmark, as proposed by TGET and NETT and outlined in Box10.10 on page 373.

NSW supports the proposed asset by asset method as the broad approach for determining transitional direct assistance, and relating direct assistance to each assets nameplate capacity (p384), and emissions intensity (p381). If this approach is taken, it is not clear that there is any benefit from establishing separate compensation pools for black coal and brown coal generators. NSW also supports the preferred definition of black coal generators entitled to transitional assistance as excluding dual fuel generators (p382). NSW notes the proposal in the Green Paper for the asset by asset method to include a “review process” (p388), which is taken to mean an ex ante assurance review. NSW supports such a review being included in the determination process.
NSW supports the preferred cut off date of 3rd June 2007 for eligibility for direct assistance. NSW also supports the proposed approach to managing changes in ownership, of the assistance being given to whoever is the registered generator on the day assistance is delivered (p377).

NSW also supports that transitional direct assistance should be determined as a once off provision, irrespective of the timing of its provision (p388-9). In order to avoid perceptions of recipients benefiting from windfall gains associated with their transitional assistance, NSW supports further consideration of options to make that support conditional on observable outcomes in the NEM (p387) provided that those outcomes are ‘incentive compatible’. This could provide for the possibility of some clawback of the transitional direct assistance that had been provided to some generators, given that certain predetermined circumstances had arisen (p388). Note that provision of assistance by free permits rather than cash removes completely the permit price risk and thus substantially reduces the need for any clawback. The possibility of clawback without an incentive compatible mechanism may lead to perverse incentives and gaming behaviour by participants.

As the National Electricity Market is an administered rules based market, it lends itself to detailed bottom-up modelling much more than any other commodity market to determine the level of transitional assistance. Bottom-up modelling is used to inform decisions by investors in the NEM. Model based estimates are therefore apt for developing rules for allocating the overall quantum of direct assistance to high emission generators. While the bottom-up models of the NEM are technically complex, the modelling framework is conceptually straightforward, and conventional valuation methods can be applied. The NSW Government supports the Commonwealth position that assistance should be based on readily observable criteria, but believes that modelling of the NEM is still required to provide some assurance that the quantum of assistance proposed is likely to be adequate, and that the observable criteria are appropriately applied. Given this, NSW also supports using such modelling to allocate the total assistance pool between black coal and brown coal generator pools, if a decision is made to establish two such pools.

The Green Paper includes the suggestion that the total quantum of transitional assistance may be determined by taking into consideration the net gains for the industry, and limiting that available for coal generators accordingly (p374). This approach is not consistent with the asset by asset approach and is not supported. In particular, it fails to address the issue of sovereign risk for new investors.

If a clawback mechanism is to be applied to coal generators receiving transitional assistance, NSW supports consideration being given to a clear, transparent, predetermined mechanism being applied ex post to low emission generators who enjoy significant windfall gains. The approach would have to avoid creating perverse incentives, or otherwise being detrimental to future investment. A one-off windfall levy tied to observable outcome measures that cannot be controlled by individual generators is a possible mechanism that could be considered.
The Green Paper raises the possibility of the quantum of assistance depending on the timing for the commissioning of carbon capture and storage technologies (p351-2). Due to the very long commercialisation lead time and huge uncertainty about the timing and cost of this technology, this is impractical and NSW does not support any such adjustment to the compensation pool.

NSW supports the Commonwealth's proposed timing for decisions on direct assistance, that it should be after the setting of medium term national targets. But NSW does not support it being decided after the determination of assistance to EITE industries, and the auction time-frames (p389-90).

**Permit Allocations**

Permit allocations provide a better vehicle for assistance than a cash payment, as changes in the value of permits help to correct for errors in forecasting the impact of the CPRS. Given that the intent of assistance is to offset exposure to regulatory risk associated with the CPRS, it is logical that assistance is provided in the form of an asset of correlated value (i.e. a right to a permit allocation) rather than a cash payment of fixed value. An up-front cash payment only partly addresses the risk issues, and it would be good fortune to have determined the appropriate quantity of cash in advance. This could include some future dated permits. This approach will provide greater reassurance to investors by insulating future permit price risk.

NSW modelling suggests that when expressed as a percentage of total permits, the required allocation to electricity generators to offset disproportionate loss is relatively modest. It will not excessively erode the permit revenue available to assist households and EITE industries, and fund some RDI. The relatively small quantity required will also make it easy to differentiate the approach taken in Australia from the flawed EU approach, and help communicate the public interest there is in its provision.

**Waste**

The Green Paper notes that the waste sector exhibits many of the proposed characteristics of a strongly affected industry, but does not propose to designate it as such based on two factors.

As previously described, landfills with above average volumes of old waste in Sydney and those approaching the end of their lifetime, are constrained in their ability to pass on costs.

The Green Paper notes the potential for large landfills to earn revenue through the Mandatory Renewable Energy Target scheme to offset any new costs. However, it is understood that only 8 NSW landfills currently find it economic to generate power. The NSW Government is not in a position to comment as to whether earnings from generating power would offset its costs plus the liability of the CPRS for those landfills that are able to do so.
NSW’s preference is for these issues to be addressed through coverage rules, but otherwise the waste sector should be designated as a significantly affected industry and arrangements developed to compensate the two types of landfill unable to pass through costs.

If the uneven impacts on these two types of landfill are not addressed through coverage rules, NSW is willing to work with the Commonwealth to determine which landfills in NSW will be disproportionately affected and the compensation arrangements.

**Chapter 11 Tax and Accounting Issues**

The Green Paper proposes to develop discrete amendments to relevant sections of the existing income tax legislation to provide equivalent treatment of taxpayers carrying on existing income earning activity.

NSW has no objection to this approach. However, we note that the Green Paper is silent on a range of other related tax issues which may have an impact on future investment in the NSW economy; the treatment of transfer pricing in respect of permits traded between jurisdictions and the GST treatment or customs duty treatment of alternative energy sources to name two examples. NSW would expect such issues to be addressed in greater detail during the development of legislative amendments.

To the extent that Commonwealth modelling can aid the states to assess the tax impacts of the CPRS on state budgets, NSW requests as much relevant detail as possible to be released in modelling results in October.

**Chapter 12 Transitional Issues**

*Greenhouse Gas Reduction Scheme (GGAS)*

Upon commencement of the CPRS, the bulk of GGAS will cease to operate.

However, a smooth transition is critical to protect the legitimate business interests of scheme participants, minimise avoidable impacts on NGAC and CPRS permit markets, and maintaining incentives for abatement projects in the transition to the CPRS.

The Green Paper contains little detail on the Commonwealth’s preferred arrangements for the GGAS-CPRS transition, but NSW welcomes the commitment to work cooperatively on transition issues. This is a very important matter for NSW and GGAS participants. GGAS has led to the establishment of a set of ‘early mover’ businesses and it is vital that these parties are not disadvantaged as a result of the CPRS transition.

While it is not possible to provide definitive positions until the Commonwealth Government releases further details of its scheme design, some broad assessments can be made.
Some issues that have been raised in the consultation with stakeholders that need to be addressed in the transition to the CPRS when GGAS ends include:

- the treatment of projects that were committed after GGAS was extended beyond 2012 and before the Commonwealth Government committed to a national emissions trading scheme. In general, it is reasonable to assume that most project proponents had an expectation that GGAS would continue until 2012, but this will need to be assessed on a case-by-case basis;

- the treatment of different classes of accredited abatement certificate providers who may be disadvantaged by the introduction of the CPRS. For example, the method of permit allocation to existing coal-fired generators could disadvantage generators who have responded to GGAS and reduced their emissions intensity;

- Waste coal mine generators (and landfill gas generators if as seems likely the waste sector is covered under the CPRS) could potentially be disadvantaged by the introduction of the CPRS as they will become liable parties under the CPRS and will be reducing the liabilities of coal mines (and landfill operators) rather than being credited with activities that reduce the release fugitive methane emissions under GGAS. These projects will need to be assessed on a case-by-case basis;

- Cogeneration projects are encouraged by GGAS, but may not receive the same incentive under the CPRS. These projects are clearly providing low emission outcomes and should be supported;

- When GGAS commenced in 2003, NSW was the only jurisdiction that imposed greenhouse targets on its economy. Accordingly, GGAS recognises the mitigation activities of some generators that pre-date GGAS (so called Category A generators) and allows them to create abatement certificates. Retailers that are able to claim certificates under these provisions had an expectation that these provisions would continue until 2012.

- GGAS was the first scheme in the world to include forest carbon sequestration and has a robust methodology for estimating carbon sequestered based on Kyoto compliant forests. It would be appropriate for projects currently accredited under GGAS to be transferred into the proposed voluntary reforestation category of the CPRS;

- GGAS also contains provisions to encourage the reduction of industrial process emissions from the operations of large electricity users. While a number of these companies will be classified as Trade Exposed Emissions Intensive (TEEI) and provided with a level of assistance as proposed in the Green Paper, transition arrangements need to recognised that for these companies and others that are not TEEI, full return on investments in abatement projects may not be realised by 2010. These projects will need to be assessed on a case-by-case basis;
Energy efficiency projects will not be able to create credits under the CPRS as they can under GGAS. However, as part of its transition arrangements, the NSW Government is committed to continuing the incentive for energy efficiency projects in NSW and will implement the NSW Energy Efficiency Trading scheme (NEET) from 1 January 2009. Arrangements being considered include transition of existing GGAS accreditations into NEET; and

Treatment of unused abatement certificates at the end of GGAS. At the foreshortened end of GGAS in 2010, parties will be left holding unused abatement certificates. An appropriate treatment of unused certificates is important to maintain investor confidence in the remaining years of this world leading emissions trading scheme. In response to the transition consultation paper, a majority of stakeholders indicated their preferred treatment would be for GGAS abatement certificates to be converted to CPRS permits on a tonne-for-tonne basis. However, it is also recognised that the treatment of unused GGAS certificates should ensure that GGAS targets are met until GGAS is terminated.

Climate Change Action Fund

NSW supports the proposed establishment of a Climate Change Action Fund (CCAF).

However, as the CCAF is earmarked only to be 'transitional', there is no provision for an on-going allocation of permit revenue to Research, Development and Innovation (RDI) and infrastructure in the Green Paper.

NSW notes that the Commonwealth Government has allocated significant funding elsewhere to RDI and infrastructure, such as the water, energy and climate change component of the Building Australia Fund.

However, major on-going investment to accelerate RDI and fund low-emissions infrastructure will be required to meet greenhouse targets at least-cost to the community and economy in the medium term. The draft report of the Garnaut Review, for example, estimates Australia needs to invest over $3 billion per annum towards the research, development and commercialisation of low-emissions technologies.

One important example is carbon capture and storage (CCS). The Green Paper is very supportive of carbon capture and storage, recognising that ongoing government support will be needed to continue to help drive the development and deployment of CCS technology, and NSW supports this emphasis. However, there is a need to accelerate research, development and deployment of the technology. The Stern Review states that a failure to develop CCS technologies would result in a narrower portfolio of low-carbon technologies increase abatement costs. This will require significant additional funding for research and demonstration plants.

The draft report of the Garnaut Review also notes large-scale infrastructure investment in sectors such as energy and transport will be required, and endorses the use of permit
revenue to fund investment in public transport. Complementary measures are of vital importance for the transport sector and there is a sound case for the use of permit revenue to fund investment in transport infrastructure and research and development.

NSW believes a share of permit revenue should be allocated over time to investment in RDI and infrastructure from the outset of the CPRS. In view of competing claims for household and business to smooth the introduction of the CPRS, this allocation might be small initially, but could increase over time as transitional assistance is transferred into investment in RDI and infrastructure.

Chapter 13 Governance Arrangements and Implementation

If Australia is to compete for the location of the Asia Pacific region’s carbon hub, the Commonwealth’s decision on where to locate the financial and administrative institutions associated with the CPRS is critical.

Trading and finance hubs world-wide demonstrate that a critical mass of co-located shared infrastructure, skilled labour, supporting services, and governance institutions within a single city is essential.

Sydney is already the regional financial hub, and is home to a pool of skill and experience in carbon trading that is unique in Australia:

- the Australian Stock Exchange, the Sydney Futures Exchange (which already services the energy and environmental products market), and the Australian head offices of major national and international banks, funds managers, and brokerage firms;
- high-volume derivatives markets;
- major financial market governance infrastructure (the Australian Securities and Investments Commission, the Australian Prudential Regulation Authority, and the Reserve Bank of Australia); and
- the largest financial services market in Australia. Sydney hosts a significant cluster of energy companies, financial service providers, law firms and accounting firms, with several years of experience in carbon trading under GGAS.

In addition to this concentration of industry activity, New South Wales has unique experience in administering and regulating a mandatory emissions trading scheme. The NSW GGAS Scheme, established in 2003, was one of the first such schemes in the world, and is the second largest mandatory emissions trading scheme after the EU.

The knowledge and experience New South Wales has gained in administering this scheme, combined with the natural advantages of Sydney as a financial hub, make Sydney the ideal location for the CPRS registry and regulator.
These represent strategic advantages upon which Sydney can build to become a carbon finance hub in the Asia-Pacific region. The economic benefits of successfully developing a carbon trading hub in the Asia-Pacific region will be substantial. The UK Government successfully helped position London as the financial hub of the global carbon market. London now captures over 70% of a global market presently worth around US$100 billion a year in traded emissions and supporting legal and financial services, and a further US$200 billion in clean and low carbon technology project investment.

However, seizing the opportunity will require early action and a partnership between different levels of Government and industry. Singapore, Hong Kong, Tokyo and even New Zealand are already taking decisive steps to try and position themselves for this role in the Asia Pacific.

Headquartering the regulatory and administrative infrastructure for the CPRS in Sydney is a vital first step in making this happen. Sydney should be the location for scheme administration, including the carbon registry and scheme regulator. The Commonwealth’s Kyoto Protocol instruments such as the Designated National Authority (DNA) and the Carbon Fund (if established) should be also located in Sydney.

If we fail to consolidate our existing strengths and spread expertise across Australia, then Australia runs a strong risk of losing out to another city overseas.

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