10 September 2008

Carbon Pollution Reduction Scheme Green Paper Submission
Department of Climate Change
GPO 854
Canberra ACT 2601

**Australian Aluminium Council submission in response to the Carbon Pollution Reduction Scheme Green Paper on Greenhouse Gas Emissions Trading Scheme Design**

The Australian Aluminium Council (AAC) wishes to comment on the Carbon Pollution Reduction Scheme (CPRS) Green Paper on Greenhouse Gas Emissions Trading Scheme Design – and our primary concerns are focussed on the impact of the scheme on the emissions-intensive trade-exposed (EITE) industries. The AAC appreciates the significant efforts by the Government to consult on the issues raised in the Green Paper and we will be continuing our discussions on a number of matters over the coming weeks.

**AAC Submission Key Points on Emissions-intensive Trade-exposed Industries (EITE)**

In responding to the Carbon Pollution Reduction Scheme Green Paper on Greenhouse Gas Emissions Trading Scheme Design, the AAC recommends the following

- In line with ALP election commitments, the competitiveness loss to EITE industries needs to be minimised, pending similar carbon imposts by industry competitors globally
- Increase the permit allocation share for EITEs (above the 20% component) to a level equal to the ratio of emissions from the industries included in the EITE basket to the total national emissions in 2007-08 – and include projects already committed/under construction.
- The proposed two-tier allocation should be changed to a single 90% allocation for all EITE industries . . . and provide 100% allocation for the impact from indirect electricity emissions.
- The EITE allocation, and the Australian trajectory, must hold steady to 2020, pending action by other key emitters/competitors (no decay factor).
- Global coverage of 80% of aluminium (and market substitutes) and alumina production would be an appropriate threshold to trigger a five-year phase down of the EITE permit allocation; over this time, the new (higher) carbon cost paradigm should be reflected in global pricing.
- New growth and new entrants in EITE industries should be granted similar permit allocations for the same period until global carbon conditions (as above)
- Apply industry average emissions intensities for allocation for direct emissions, but allocate permits on the basis of specific facility impact for indirect emissions
- Given the introduction of the CPRS, there should be no increased liability under renewable energy targets for trade-exposed electricity-intensive industries beyond existing levels.
Introduction
The Australian alumina and aluminium industries are described in the Annex to this submission.

The AAC is a member of the Australian Industry Greenhouse Network (AIGN) and shares many of the general views expressed in the AIGN submission made in response to the Carbon Pollution Reduction Scheme Green Paper. However, there are a number of specific points of detail that we wish to address further, particularly in respect of the treatment of emissions-intensive trade-exposed industries, such as alumina refining and aluminium smelting, covered in Chapter 9 of the Green Paper.

Individual AAC member companies will provide submissions detailing specific aspects, including operational and financial data.

The situation for Australian aluminium smelters is unique: only 11.5% of total greenhouse gas emissions are direct emissions, with electricity inputs being the dominant source of indirect emissions. Hence, the proposed treatment of these facilities to address the impact of the CPRS on electricity inputs is of critical importance.

The AAC would, at the outset, wish to highlight the critical importance for the Rudd Government to recognise the impact that the proposal to expand the renewable energy target (RET) will have on the solutions developed within the CPRS for some emissions-intensive trade-exposed industries — and request that the CPRS and the proposed expansion of the RET be addressed/developed in parallel to avoid outcomes contrary to the intent of the provisions being developed under the CPRS.

An Australian Emissions Trading Scheme
The AAC shares the view expressed in the Green Paper that the development of a comprehensive global agreement under which all major emitters have binding carbon constraints would be the first best solution to address the competitive concerns of EITE industries.

However, in the absence of such an agreement, the AAC supports the Australian Government’s decision to introduce a national market-based ETS to address the challenges of climate change whilst recognising the importance of avoiding outcomes that result in emissions and production transferring internationally for no environmental gain.

Critical elements in the early introduction of an Australian ETS for the alumina and aluminium industries include:

- Maintaining the international competitiveness of Australian emissions-intensive trade-exposed (EITE) industries, in the absence of a comprehensive international carbon signal;
- An allocation of permits covering direct and indirect emissions for both existing and new investments in emissions-intensive trade-exposed industries;
- Permit security over an investment-relevant time frame that must be retained while key international competitors do not face a similar carbon cost; and
- Ensuring an effective market-based ETS is not damaged by other policy interventions such as renewable energy targets — and that steps taken to avoid prejudice to emissions-intensive trade-exposed industries are not negated by such policies now or in the future.

Treatment of emission intensive trade exposed industries
The AAC supports the allocation of permits for existing operations and new investment in trade exposed emissions intensive industries, for as long as is necessary, to offset the erosion of international competitiveness that would result from the introduction of an Australian ETS in the absence of a global carbon constraint.
Australian alumina and aluminium will, under global carbon conditions, continue to be a competitive growth-oriented Australian industry, adding value to Australian bauxite and providing employment, with a strong presence in regional Australia.

EITE permit allocation is not about taking revenue from anyone - this is about striking a new tax with differential tax rates reflecting the level of trade exposure of some Australian emissions intensive industries, pending global action.

It makes no sense to close out new growth and new entrants in industries that will remain internationally competitive when others face similar carbon imposts, such as alumina in Western Australian and Queensland including Chalco’s Aurukun project – and aluminium such as the proposed Hydro Aluminium Kurri Kurri expansion. New growth and new entrants in EITE industries should be granted similar permit allocations for the same period as existing projects (see later discussion on withdrawal of the EITE permit allocation).

Our submission argues for a single 90% permit allocation for all EITE industries (rather than the two tier 90/60 approach put forward in the Green Paper).

We consider the position of alumina to clearly justify the single 90% allocation approach:
- when there is a global carbon market, the Australian alumina industry will continue to grow in support of the demand for aluminium production;
- in 2007, Australia produced 25% of global metallurgical grade alumina, with the growing Chinese industry producing a similar amount;
  - the Australian industry is below the IAI global (world less China) average for energy consumption;
  - Chinese alumina using domestic bauxite, in most cases, has a threefold greater energy consumption and a comparison of Australian alumina with Chinese alumina reflects a significantly lower greenhouse footprint;
- alumina refining is Australia’s largest existing and future potential host for high efficiency co-generation operations;
- using Australia’s bauxite as feedstock and adding significant value to this natural resource, alumina production is 80% export but also provides an essential input to the production of aluminium in Australia, a further added value step to Australia’s resource endowment;
- governments have historically acknowledged the importance of the alumina industry to the Australian economy by requiring potential bauxite developers to commit to local refining of the product before being given a license to operate [a bauxite mine].

Alumina refining is a growth industry for Australia – and its future should not be jeopardised

The AAC is concerned that the Green Paper preferred position to “address some of the competitiveness impact of the scheme on EITE industries in order to reduce carbon leakage” falls well short of the election policy document ALP: Labor’s Plan for a Stronger Resources Sector (page 9) which stated that “A Rudd Labor Government will:
  Ensure that Australia’s international competitiveness is not compromised by Australia’s response to climate change.
  Ensure that Australian operations of emission intensive trade exposed firms are not disadvantaged by emissions trading.”

The AAC considers that the level of Government support should be determined by the international factors affecting the EITE industry or sector, not on an arbitrary emissions cut-off point.

The security of EITE permit allocation will be critical to investment decision-making by the Australian alumina and aluminium industries. The risk of EITE permit allocations being withdrawn before our major international competitors face comparable carbon constraints would significantly discourage new and sustaining investment and job creation in Australian industry. This applies equally to the initial allocation of permits and any periodic review of permit allocation.
In 2007 the main competitors to the Australian industry were China, North America, Russia, Western Europe, the Middle East (for aluminium), Caribbean (for alumina), Latin/South America, India and Southern Africa (for aluminium). It would be essential for major producers to be subject to a comparable carbon constraint before EITE status is removed from the Australian aluminium and alumina industries.

It is suggested that global coverage of 80% of emissions from the production of aluminium (and market substitutes) and alumina would be an appropriate threshold to trigger the start of a five-year phase down of the EITE permit allocation; over this time, it is expected that would see the new (higher) carbon cost paradigm reflected in global pricing.

Investment decisions on new production capacity (greenfields/brownfields) are based on 25 to 30 year investment timeframes; companies may not see significant returns from these capital intensive projects until 15–20 years after the decision to invest. It is essential that permit certainty is provided for new projects for at least 20 years from the start of production.

The relatively flat (compressed) operating cost curve exhibited by the global [smelting] industry means that a loss of 10% on the initial allocation will shift facilities significantly to the upper fourth quartile of the global cost curve – and the further impost on Australian costs from either ETS permit allocation decay or increased RET obligations will see Australian operations becoming unsustainable. This is illustrated in the AAC supplementary confidential submission.

In response to discussions with DCC officials, we have defined the Australian alumina, aluminium and aluminium rolling industries as follows:

**Australian alumina**
The production of alumina from bauxite within an integrated facility and typically including digestion (with variable operating temperatures depending on bauxite chemistry), precipitation, calcination and residue treatment, but excluding the production of lime.

**Australian aluminium**
The production of aluminium by the electrolytic reduction of alumina, which will typically include anode manufacture and typically include casting.

**Australian rolled aluminium**
The production of rolled aluminium products which would typically include melting, casting, rolling, thermal treatment, finishing to customer specifications and packing.

The following table outlines the AAC’s current thinking in response to the CPRS Green Paper Chapter 9 EITE elements.
AAC Position in response to the CPRS Green Paper Chapter 9 EITE elements:

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<tr>
<th>CPRS Green Paper</th>
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<tr>
<td><strong>Chapter 9.1 EITE industry assistance</strong></td>
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<td>“The first best solution to address the competitive concerns of EITE industries would be to develop a comprehensive global agreement under which all major emitters have binding carbon constraints. Effective sectoral agreements for EITE industries would also address these concerns for industries covered by such agreements. However, in the absence of these developments, assisting EITE industries in response to the introduction of the scheme may be warranted on environmental grounds and because it may smooth the transition of the economy.” (Page 292)</td>
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<th>AAC Position</th>
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<tr>
<td>The AAC acknowledges the development of a comprehensive global agreement under which all major emitters have binding carbon constraints as the first best solution to address the competitive concerns of EITE industries. However, we do not share the confidence of the Green Paper that sectoral agreements for EITE industries would also address these concerns – significant competitive issues arise at the inter-commodity level if alternative products are not covered by sectoral agreements (steel, glass, plastics, carbon fibre, etc).</td>
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| CPRS Green Paper Preferred position: Guiding principles for EITE assistance policy: |
| “The key rationales for providing assistance to emissions-intensive trade-exposed (EITE) industries would be to: |
| • address some of the competitiveness impacts of the scheme on EITE industries in order to reduce carbon leakage |

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<td>The AAC welcome the Green Paper recognition that, “if the introduction of a carbon price ahead of key competitors simply resulted in EITE industries contracting in Australia, re-locating offshore and using similar or worse emissions-intensive fuels or technologies, it would weaken Australia’s effective contribution to the global emissions reduction effort. This is often referred to as ‘carbon leakage’.” (Page 293)</td>
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| However, the (converse) example given in the Green Paper requires further clarification: |
| “Conversely, if entities that are energy-intensive relocate to another jurisdiction that has a less emissions-intensive energy sector, all other things equal, the move would reduce global emissions. This would be the case if an aluminium smelter, for example, moved to a jurisdiction that only uses hydro-generation to produce electricity.” (page 293) |

| This argument ignores the more dynamic nature of global investment and production decisions: smelters don’t move as a general rule and a new smelter will be an investment decision based on the relative business case and could involve electricity generated from a range of sources; if aluminium smelting investments are continuing to occur in jurisdictions with an equivalent emissions-intensive energy sector to here in Australia, then global emissions may not have improved, unless the proportion of coal-based aluminium production at the global level has reduced; recent evidence indicates that the share of coal-based aluminium production has been increasing. |

| CPRS Green Paper Preferred position: Guiding principles for EITE assistance policy: |
| “The key rationales for providing assistance to emissions-intensive trade-exposed (EITE) industries would be to: |
| • address some of the competitiveness impact of the scheme on EITE industries in order to reduce carbon leakage |

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<td>The AAC is concerned that the preferred position to “address some of the competitiveness impact of the scheme on EITE industries in order to reduce carbon leakage” falls well short of the election policy document ALP: Labor’s Plan for a Stronger Resources Sector (page 9)</td>
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<tr>
<td>“A Rudd Labor Government will:</td>
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<tr>
<td>Ensure that Australia’s international competitiveness is not compromised by...</td>
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• provide transitional support to EITE industries that will be most severely affected by the introduction of a carbon constraint
• support production and investment decisions that would be consistent with a global carbon constraint.

The Government’s support for EITE industries would be balanced against its objectives for non-assisted sectors and households.

EITE assistance would be adjusted over time to ensure that all parts of the economy contribute to the objective of reducing emissions.

The EITE assistance policy would be reviewed at each five-year scheme review to determine whether that assistance continues to be consistent with the rationale for assistance, appropriately balances the competing policy objectives and continues to be consistent with Australia’s international trade and climate-change obligations.”

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<th>Box 9.2 International trade obligations</th>
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Australia’s response to climate change. Ensure that Australian operations of emission intensive trade exposed firms are not disadvantaged by emissions trading.”

The AAC considers that the level of Government support should be determined by the international factors affecting the EITE industry or sector – and not against its objectives for non-assisted sectors and households, an artificial trade-off causing unhelpful conflict and a hostile them-us environment.

The AAC considers that any adjustment to the level of EITE assistance should only occur when our international competitors (at the industry/product level) face similar carbon constraints.

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<th>9.2 Form of assistance</th>
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CPRS Green Paper preferred position: “The proposed assistance would be provided to emissions-intensive trade-exposed industries in the form of free allocations of carbon pollution permits at the beginning of each compliance period, contingent on production” (page 302).

The AAC welcomes the assurance given that the Australian Government “will ensure that the design of the scheme, including EITE assistance policy, complies with Australia’s international trade commitments” (page 299).

However, the AAC seeks clarification as to whether the scheme parameters (as outlined in the CPRS Green Paper) have been assessed by experienced trade law specialists within the Department of Foreign Affairs and Trade as being in compliance with our WTO and FTA obligations.

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<th>9.3 Identifying recipients of EITE assistance</th>
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CPRS Green Paper preferred position to provide EITE assistance “on the basis of the industry-wide emissions from a process or activity to ensure that assistance is well targeted and is equitable both within and between industries” (page 304).

All activities within the smelter and refinery fence should be included as forming the activity in the aluminium smelting and alumina refining industries (see definitions).

The common technology basis for all Australian aluminium smelters means direct emissions can be compared across the sectors, with differences deriving mainly from access/source of energy inputs and the technology vintage. The main difference in alumina refineries stems from the different technology vintages combined with the varying temperatures of digestion depending on the chemistry of the bauxite processed.

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<th>9.3.2 Assessing emissions intensity</th>
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CPRS Green Paper preferred position: EITE assistance “would be provided for the direct and indirect electricity emissions associated with the activity or process.” (page 309)

The AAC welcomes the CPRS Green Paper preferred position that EITE assistance would be provided for the direct and indirect electricity emissions associated with the activity or process.

The AAC notes the CPRS Green Paper preferred position identifies emissions per
A measure of emissions per unit of revenue “would be the most transparent and comparable indicator of the materiality of the carbon cost impact across different traded industries.” (page 309)

unit of revenue as being the most transparent and comparable indicator of the materiality of the carbon cost impact across different traded industries. However, we are aware of ongoing discussions on this aspect and are prepared to consider alternative measures to assess the impact, including gross value added.

9.3.3 Assessing trade exposure
CPRS Green Paper preferred position: “all industries, other than those for which there exists a physical barrier to trade, be considered for EITE assistance. This would reflect the fact that all tradeable industries are somewhat limited in their ability to pass through cost increases, at least over the medium term.” (page 311)

The Australian aluminium and alumina industries operate in a highly competitive global market place. Export sales account for about 80% of Australian alumina and aluminium production. In aluminium, our competitors include China, India, South Africa, Middle East, Brazil, Europe, Russia, Canada and USA; in alumina, our competitors include China, India, Brazil, Europe, Russia, USA, Jamaica and Guinea.

Aluminium metal is traded on the London Metal Exchange (LME) which sets a global reference price against which aluminium is marketed around the world. Alumina contract prices are normally set as a percentage of the aluminium metal price as quoted by the LME.

9.3.4 Determining eligible EITE activities
CPRS Green Paper seeks stakeholders’ views on:
• the proposed assessment process for establishing the emissions per unit of revenue for different production activities in the economy
• the use of data from 2006–07 to 2007–08 to determine eligibility of production activities
• the entity to which EITE assistance should be provided.” (page 312)

The AAC position is shown above at 9.3.2 Assessing emissions intensity.

9.4 Initial size/distribution of EITE assistance (pp. 315-321)
CPRS Green Paper preferred position: “Up to around 30 per cent of Australian carbon pollution permits would be freely allocated to emissions-intensive trade-exposed (EITE) activities. At the outset of the scheme, if agricultural emissions are excluded from scheme coverage, this would be up to around 20 per cent of permits.

Eligibility for EITE assistance would be based on the industry-wide emission intensity of an activity or process being above a threshold of about 1,500 tonnes carbon dioxide equivalent (CO2-e) per million dollars of revenue.

Initial assistance would cover around 90 per cent of emissions for EITE activities that have emissions intensities above about 2,000 tonnes CO2-e per million dollars of revenue and around 60 per cent of emissions for EITE activities that have emissions intensities between about 1,500 and 2,000 tonnes CO2-e per million dollars of revenue.

The AAC is very concerned that the proposed EITE allocation (of 20% for non-agricultural EITEs) is not directly linked to the ratio of emissions from the industries included in the EITE basket to the total national emissions in 2007-08. This should be the logical starting point and the permit allocation share for EITE should be determined on this basis, rather than be pre-determined as a fixed percentage without a clear relationship to the share of emissions represented by the final EITE grouping.

The AAC considers the 90/60 two-tier allocation to be inappropriate – and consider that all EITE industries receive a permit allocation equal to 90% of direct emissions to address the adverse impact on international competitiveness

• and an allocation equal to 100% for the impact of the ETS on indirect emissions, given our inability to influence the emissions outcome

We consider the position of alumina to clearly justify the single 90% allocation approach:

   • when there is a global carbon market, the Australian alumina industry will continue to grow in support of the demand for aluminium production
These thresholds and rates of assistance may be reconsidered on the basis of further information provided through the consultation process to ensure that the total quantum of EITE assistance is limited to around 30 per cent of permits (inclusive of agricultural emissions).” (page 321)

| o in 2007, Australia produced 25% of global metallurgical grade alumina, with the growing Chinese industry producing a similar amount;  
| - the Australian industry is below the IAI global (world less China) average for energy consumption;  
| - Chinese alumina using domestic bauxite, in most cases, has a threefold greater energy consumption and a comparison of Australian alumina with Chinese alumina reflects a significantly lower greenhouse footprint;  
| o alumina refining is Australia’s largest existing and future potential host for high efficiency co-generation operations;  
| o using Australia’s bauxite as feedstock and adding significant value to this natural resource, alumina production is 80% export but also provides an essential input to the production of aluminium in Australia, a further added value step to Australia’s resource endowment;  
| o governments have historically acknowledged the importance of the alumina industry to the Australian economy by requiring potential bauxite developers to commit to local refining of the product before being given a license to operate [a bauxite mine]. |

The AAC accepts the proposal to apply the industry average emissions intensity for direct emissions, noting the 90% tier for permit allocation already introduces an immediate first tranche contribution to Australia’s emissions reduction effort, cutting into our international competitiveness and further incentivizing industry efforts to reduce emissions – but we seek a 100% allocation for the impact of the ETS on indirect emissions given our inability to influence the emissions outcome. The AAC does not accept the artificial and arbitrary limit proposed in the Green Paper on the the total quantum of EITE assistance (being limited to around 30 per cent of permits inclusive of agricultural emissions). Our view is that the permit allocation share for EITEs should be set at a level equal to the ratio of emissions from the industries included in the EITE basket to the total national emissions in 2007-08 – and include projects already committed/under construction.

| 9.5 Calculating assistance for EITE activities (pp. 322-330)  
| CPRS Green Paper seeks stakeholder views on  
| (a) Whether baselines for allocations should be based on emissions and output data over the period 2006–07 – 2007–08 (page 327)  
| (b) the electricity factor to be used in calculating allocations for indirect electricity  
| The AAC considers a longer baseline period is preferable, recognising the potential limitations due to data availability.  
| We are continuing to assess alternative methodologies for the calculation of the electricity factor – and will submit a further response on this matter. Our initial
emissions and how it can be robustly and transparently calculated (page 328)
the approach for estimating the level of output used to calculate assistance to EITE entities (page 329)

<table>
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<tr>
<th>CPRS Green Paper preferred position:</th>
<th>The AAC accepts the proposal to apply the industry average emissions intensity for direct emissions, noting already the 90% tier for permit allocation introduces an immediate first tranche impact on EITEs reducing international competitiveness.</th>
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| “Allocations of assistance for direct emissions of new and existing emissions-intensive trade-exposed (EITE) entities would be calculated on the basis of:  
• an Australian historical industry-average emissions-intensity baseline for each EITE activity  
• the output of the EITE activity for each entity  
• the assistance rate for that EITE activity.  
Allocations of assistance for indirect electricity emissions of new and existing EITE entities would:  
• be calculated on the basis of  
  - an Australian historical industry-average electricity-intensity baseline for each EITE activity  
  - an electricity factor, where the electricity factor is determined to reflect the likely average electricity price impact of the scheme  
  - the output of the EITE activity for each entity  
  - the assistance rate for that EITE activity  
• take into account whether the EITE entity has contractual arrangements with regard to electricity supply that would shield them from increases in electricity prices as a result of the introduction of the scheme.  
If an entity ceases operating an EITE activity, it would be required to return carbon pollution permits that had been allocated to it for production that did not occur.” (page 330) | The AAC seeks a full 100% allocation for the impact of the ETS on indirect electricity emissions given our inability to influence the emissions outcome.  
On the electricity factor for calculating allocations for indirect electricity emissions, this should be linked as closely as possible to the actual impact (bottom up) on the specific facility, working back from this point to a position where the impact can be calculated i.e. taking the first available measure of the impact on the facility, which could be (in ascending order) an individual facility-generator contract, a regional pool factor or a grid level factor.  
The AAC agrees that contractual arrangements that shield an EITE entity from increases in electricity prices as a result of the introduction of the scheme should be taken into account – and that an entity would be required to return carbon pollution permits that had been allocated to it for EITE production that did not occur. |

9.6 Assistance to EITE activities over time (pp. 331-334)
CPRS Green Paper preferred position:  
The EITE assistance rate “would be reduced over time with the intent that the share of assistance provided to the EITE sector does not increase significantly over time.” (page 333)  
The CPRS Green Paper seeks stakeholder views on how the proposed EITE assistance rate should be adjusted over time.  

| The AAC does not support a reduction in the rate of EITE assistance – and on the question of how to treat EITE growth, the AAC considers that new growth and new entrants in EITE industries should be granted similar permit allocations for the same period until global carbon conditions would see the new (higher) carbon cost paradigm reflected in global pricing (see 9.6.2 below).  
In order to adequately address the competitiveness issues highlighted by the Green Paper in Section 9.1 the AAC considers that the level of assistance must be held constant over time until there is comparable international action. | Refer to response to Section 9.6 above. |

9.6.2 Phase-out of EITE industry assistance (pp. 335-338)
CPRS Green Paper preferred position:  
“Between 2010 and 2020:  

| Refer to response to Section 9.6 above. | For the period beyond 2020, the AAC |
• assistance would be provided to emissions-intensive trade-exposed industries as proposed unless broadly comparable carbon constraints are introduced in key competitor economies, in which case assistance would be withdrawn.

Beyond 2020:
• assistance would be withdrawn if broadly comparable carbon constraints are introduced in key competitor economies or
• assistance would be phased out over a five year period in the event of acceptable international action that places obligations on an industry’s major competitors or
• assistance would be continued as proposed in the absence of broadly comparable carbon constraints or acceptable international action." (page 338)

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does not agree with the second position for assistance to be phased out over a five year period in response to international action that simply places an obligation on an industry’s major competitors – there must be a more tangible demonstration of action than just placing obligations on competitors which may or may not result in comparable carbon constraints.

It is suggested that global coverage of 80% of emissions from the production of aluminium (and market substitutes) and alumina would be an appropriate threshold to trigger the start of a five-year phase down of the EITE permit allocation; by this time, it is expected that would see the new (higher) carbon cost paradigm reflected in global pricing.
Other issues – Renewable Energy Targets

During the 2007 federal election the Australian Labor Party and now Federal Government announced a 20 per cent renewable energy target to be reached by 2020. The initiative seeks to bring together a patchwork of schemes operating at federal and state levels within the electricity sector. This renewable energy intervention requires an increase in the existing MRET programme, set at 9,500GWh per annum to be achieved by 2010, to ramp up to 45,000GWh/annum by 2020.

The Australian aluminium industry recognises the importance of incentives for the development and deployment of practical renewable energy technology – the implementation of an ETS, is in itself, a stimulant for the broader adoption of renewable energy technology.

However, a renewable energy target cuts across the market-based approach to the management, and achievement, of emission reduction targets being realised in an economically efficient (least cost) manner.

Enforced consumption of high cost renewable energy ‘pulled’ into the market by market regulation is contrary to the operation of a competitive, efficient market economy - and contrary to the long struggle to reform the Australian electricity market.

The existing and the proposed expanded, renewable energy target will damage the competitive situation of emissions-intensive trade-exposed industries and a similar approach for maintaining competitiveness (to that being considered for EITE industries under the ETS) is required to address this serious issue.

Mandatory adoption of renewable energy technology represents a significant additional cost for companies that rely on large amounts of energy and where international competitive pressures limit the ability to pass these costs onto consumers.

Consideration must be given to the impact on international competitiveness from this measure in the same way as the Rudd Government has acknowledged the problem facing Australian emissions-intensive trade exposed industries from national ETS in advance of global action.

The potential for an increased renewable energy target to further undermine international competitiveness could be avoided by adopting a similar approach to that proposed for the ETS, whereby large trade-exposed electricity users are allocated RET permits to avoid an adverse impact on their international competitiveness. Similar tests to determine eligibility for permit allocation under the ETS could be established, substituting electricity-intensive for emissions-intensive.

The AAC acknowledges the important contribution that can be made by renewable energy. Incentives to increase the contribution from renewable energy should not be market invasive but designed to stimulate innovation in next generation technologies and establishing the infrastructure required to support such developments.

There is a very strong negative reaction from the aluminium smelting industry in terms of lost investment and reduced economic activity to the suggestion of additional imposts via renewable energy targets and we seek early resolution of this issue in parallel with the development of the CPRS.

The AAC would be pleased to discuss these and any other matters with the Government during the development of the CPRS.

Yours sincerely

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Annex

The Australian alumina and aluminium industries

The industry mines bauxite ore and, through significant processing stages, value-adds to the resource through transformation into alumina and aluminium.

Production is energy intensive and the sector operates in a highly competitive global market place.

Australia was the world leading producer of smelter grade alumina at 19 million tonnes in 2007, about 26% of global production – slightly above China at (18.5 Mt), although it is anticipated that China’s alumina production will eclipse Australia in 2008. Aluminium production (1.96 million tonnes) remains at record levels.

Export sales account for about 80% of Australian alumina and aluminium production. Our aluminium competitors include China, India, South Africa, Middle East, Brazil, Europe, Russia, Canada and USA; for alumina, competitors include China, Brazil, India, West Africa, Caribbean, USA and Europe.

Aluminium metal is traded on the London Metal Exchange (LME) which sets a global reference price against which aluminium is marketed around the world; alumina contract prices are normally set as a percentage of the aluminium metal price as quoted by the LME.

Ensuring the industry is able to continue to operate in Australia, and grow, creates significant benefits to the Australian economy and its people. High regional benefits are generated by the industry through the location of the major facilities away from capital cities.

The Australian alumina and aluminium industries provided full-time employment in 2007 for over 17,000 persons within the industry, which when flow on employment is considered, represents an employment reach of over 60,000 Australian jobs.

The industry

- has very high value to the Australian economy;
- makes a significant contribution to the Australian workforce, particularly in regional areas;
- has no control over internationally set alumina and aluminium prices;
- relies heavily on export markets;
- has very limited electricity supply options within Australia;
- has long lead times to change (non-electricity) energy supply options; and
- has long life assets.

Greenhouse Performance

The Australian alumina and aluminium industries have not waited for emissions trading to respond to climate change and have made significant abatement gains and greenhouse gas emission reductions. For example direct emissions per unit of production are down 60% since 1990.

As an inaugural GH Challenge member, the alumina and aluminium industries recognised the issue of climate change and took early action to reduce CO$_2$-e emissions. The greenhouse gas intensity of Australian aluminium smelting has fallen sharply over time, reflecting advances in emission controls and investment in efficiency technology.

With a production increase of 58% since 1990, the changes in direct emissions per unit of production are impressive: falling from 5.05 tonnes of CO$_2$-e per tonne of metal produced in 1990 to 2.0 tonnes of CO$_2$-e per tonne of metal in 2007 – a reduction of 60%.

Indirect emissions from electricity and alumina consumption in the aluminium smelting process have risen in absolute terms, reflecting growth in production. Importantly, indirect emissions growth has been at a rate well below the increase in production.
Indirect emissions from the consumption of electricity by Australian aluminium smelters are the dominant emissions for the industry – seven times greater than direct emissions – accounting for 80% of total emissions attributable to aluminium production. Indirect emissions from the alumina consumption account for a further 8.5% of total emissions ... leaving just 11.5% of total emissions attributable to direct emissions generated inside the smelter gate and falling within the control of the smelter operator.

Our electricity/energy performance can be seen in a global comparison:

**Table 1: Regional Average Electricity Use for Primary Aluminium Production (kWh/tonne)**

<table>
<thead>
<tr>
<th>Region</th>
<th>2006</th>
</tr>
</thead>
<tbody>
<tr>
<td>Africa and South Asia</td>
<td>14 622</td>
</tr>
<tr>
<td>North America</td>
<td>15 452</td>
</tr>
<tr>
<td>Latin America</td>
<td>15 030</td>
</tr>
<tr>
<td>Asia</td>
<td>15 103</td>
</tr>
<tr>
<td>Europe</td>
<td>15 387</td>
</tr>
<tr>
<td>Oceania</td>
<td>14 854</td>
</tr>
<tr>
<td>Weighted average</td>
<td>15 194</td>
</tr>
</tbody>
</table>

Source: International Aluminium Institute Electrical Power Used in Aluminium Production ES002 21 December 2007

**Table 2: Regional Average Energy Use of Metallurgical Alumina Production (GJ/tonne)**

<table>
<thead>
<tr>
<th>Region</th>
<th>2006</th>
</tr>
</thead>
<tbody>
<tr>
<td>Africa and South Asia</td>
<td>14.5</td>
</tr>
<tr>
<td>North America</td>
<td>11.9</td>
</tr>
<tr>
<td>Latin America</td>
<td>11.2</td>
</tr>
<tr>
<td>Europe</td>
<td>13.1</td>
</tr>
<tr>
<td>East Asia and Oceania</td>
<td>11.8</td>
</tr>
<tr>
<td>Weighted average</td>
<td>12.0</td>
</tr>
</tbody>
</table>

Source: International Aluminium Institute Electrical Power Used in Metallurgical Alumina Production ES012 21 December 2007

Growth in the alumina refining sector has been even higher than in aluminium smelting with a 70% increase in production from 1990 levels. During this period, growth in total industry CO$_2$-e emissions was only 34% higher, reflecting a 21% improvement in emissions intensity.

The available data indicate that the Australian alumina and aluminium industry is a world-leading performer in greenhouse gas performance. For example, several large gas-powered Australian alumina refineries produce less than half the amount of greenhouse gases per tonne of alumina in comparison to Chinese alumina refineries. Energy intensity in Australia is also enhanced by the higher quality bauxite being processed.
Table 3: Key Characteristics Comparison 1990:2007

<table>
<thead>
<tr>
<th></th>
<th>2007</th>
<th>Variation on 1990</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Australian Alumina</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Production</td>
<td>19 Mt</td>
<td>+ 70%</td>
</tr>
<tr>
<td>Share of global production</td>
<td>26%</td>
<td></td>
</tr>
<tr>
<td>Alumina export tonnage</td>
<td>14.9 Mt</td>
<td>+ 71%</td>
</tr>
<tr>
<td>Alumina export value</td>
<td>$5.9 billion</td>
<td>+ 101%</td>
</tr>
<tr>
<td>Total alumina ghg emissions</td>
<td>14.3 MtCO₂ₑ</td>
<td>+ 34%</td>
</tr>
<tr>
<td>Per unit ghg emissions</td>
<td>0.75 t CO₂ₑ/t</td>
<td>- 21%</td>
</tr>
<tr>
<td><strong>Australian Aluminium</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Production</td>
<td>1.96 Mt</td>
<td>+ 58%</td>
</tr>
<tr>
<td>Share of global production</td>
<td>5.2%</td>
<td></td>
</tr>
<tr>
<td>Aluminium export tonnage</td>
<td>1.65 Mt</td>
<td>+ 76%</td>
</tr>
<tr>
<td>Aluminium export value</td>
<td>$5.4 billion</td>
<td>+ 170%</td>
</tr>
<tr>
<td>Total direct ghg emissions</td>
<td>3.95 MtCO₂ₑ</td>
<td>- 37%</td>
</tr>
<tr>
<td>Per unit direct ghg emissions</td>
<td>2.0 tCO₂ₑ/t</td>
<td>- 60%</td>
</tr>
<tr>
<td>Total indirect ghg emissions from electricity</td>
<td>27.7 MtCO₂ₑ</td>
<td>+ 38%</td>
</tr>
<tr>
<td>Per unit indirect ghg emissions from electricity</td>
<td>14.1 tCO₂ₑ/t</td>
<td>- 12%</td>
</tr>
<tr>
<td>Total indirect ghg emissions from alumina</td>
<td>2.9 MtCO₂ₑ</td>
<td>+ 23%</td>
</tr>
<tr>
<td>Per unit indirect ghg emissions from alumina</td>
<td>1.5 tCO₂ₑ/t</td>
<td>- 21%</td>
</tr>
<tr>
<td>Total aluminium ghg emissions</td>
<td>34.5 MtCO₂ₑ</td>
<td>+ 20%</td>
</tr>
</tbody>
</table>

Source: Australian Aluminium Council Sustainability Report 2007. Note: In the Report, indirect emissions from the alumina consumed in the aluminium smelting process are not included to avoid double counting these emissions.

The available data indicate that the Australian alumina and aluminium industry is a world-leading performer in greenhouse gas performance. For example, several large gas-powered Australian alumina refineries produce less than half the amount of greenhouse gases per tonne of alumina in comparison to Chinese alumina refineries. Energy intensity in Australia is also enhanced by the higher quality bauxite being processed.

The Australian alumina and aluminium industries are fully engaged with international actions under the voluntary global sustainability initiative of the International Aluminium Institute – and are a direct industry contributor to the work of the Aluminium Task Force under the Asia Pacific Partnership for Clean Development and Climate where the capacity for industry to address regional emissions is available and tangible. We are working in close collaboration with our industry counterparts in China to achieve improved environmental outcomes within the industry.

In the absence of a global ETS, any leakage of existing or new investment to other global locations such as China, India, South Africa and the Middle East would both harm the Australian economy and, in many cases, be environmentally detrimental. Climate change is a truly global challenge and maintaining production and investment in countries with modern emission controls, relatively high greenhouse efficiency, a history of environmental improvement and a strong desire to achieve even more must be a sustainability priority.

A number of new investments have been identified for the sector in Australia:

- **Bauxite**: new mine in Cape York Qld around 6.5 million tonnes capacity: investment around $0.7 – 1.0 billion.
- **Alumina**: three advanced projects around 6 million tonnes additional capacity: investment around $10 – 11 billion. two further projects under development, with around 2.2 million tonnes additional capacity: investment around $4 billion.
- **Aluminium**: three advanced projects on hold pending resolution of electricity supply/pricing: around 850,000 – 950,000 tonnes additional capacity: investment around $7.5 – 8.0 billion.
The industry is a notable example of value adding within Australia through facilities refining bauxite into alumina and then the smelting of alumina to create aluminium. The loss of alumina refining and aluminium smelting opportunities would send Australia back down the value-adding ladder to being a bauxite quarry for the world – this is in direct contrast to the desire/intent of Australian governments and the industry.

The following summarises the export contribution played by the Australian aluminium industry in 2007 – and an estimate of the total value of production.

<table>
<thead>
<tr>
<th>Export Type</th>
<th>Quantity</th>
<th>Value</th>
<th>Rate per tonne</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bauxite exports</td>
<td>5.7mt</td>
<td>$158m</td>
<td>$27/tonne</td>
</tr>
<tr>
<td>Total value bauxite production</td>
<td>63mt</td>
<td>= $1,700m</td>
<td></td>
</tr>
<tr>
<td>Alumina exports</td>
<td>15.1mt</td>
<td>$6,417m</td>
<td>$425/tonne</td>
</tr>
<tr>
<td>Total value alumina production</td>
<td>18.5mt</td>
<td>= $7,800m</td>
<td></td>
</tr>
<tr>
<td>Aluminium exports</td>
<td>1.62mt</td>
<td>$5,808m</td>
<td>$3,585/tonne</td>
</tr>
<tr>
<td>Total value aluminium production</td>
<td>1.96mt</td>
<td>= $7,000m</td>
<td></td>
</tr>
</tbody>
</table>

Source for export data: ABARE Australian commodities March quarter 08.1

Reference: Australian Aluminium Council Sustainability Report 2007