



19 February 2008

Submissions

Garnaut Climate Change Review

Level 2, 1 Treasury Place

Melbourne VIC 3002

Dear Sir/Madam

CIF SUBMISSION: Garnaut Climate Change Review

The Cement Industry Federation (“the CIF”) welcomes the opportunity to submit comments to the Garnaut Climate Change Review.

Background

The Cement Industry Federation is the national body representing the Australian cement industry, and comprises the three major Australian cement producers - Adelaide Brighton Ltd, Blue Circle Southern Cement Ltd and Cement Australia Pty Ltd. Together these companies account for 100 per cent of integrated clinker and cement supplies in Australia.

Cement is a vital commodity for the Australian economy, not only as a critical input for Australia’s construction industry, but increasingly in resource recovery and reuse innovation – in both cases providing significant economic and social benefits.

The CIF aims to promote and sustain a world-class, internationally competitive Australian cement industry, positioned to take advantage of emerging market opportunities, and endorsed by a community licence to operate.

Executive Summary

The Australian cement industry recognises the threat that climate change poses to our natural environment as identified by the scientific world. We have been working diligently on this challenge for well over a decade and have developed and maintained a verifiable emissions database extending back to 1990. Since that time the industry has reduced the carbon intensity of its product by 20% per tonne. This result can be put down to activities within three key manufacturing endeavours being:

- Striving for operational excellence
- Adoption of best available technology, and
- Development of new technology.

CIF member companies were, through the Federation one of the early adopters of the Australian Government's Greenhouse Challenge Plus program; have completed and are implementing recommendations from the Cement Industry Action Agenda; are participants in the Energy Efficiency Opportunities Assessments; and are highly active participants in the Asia Pacific Partnership on Clean Development and Climate (APP). Member companies are also involved in a myriad of State government programs addressing energy efficiency and carbon dioxide abatement.

In addition to the national programs with which the industry is involved, we are also an active participant in the Cement Sustainability Initiative, conducted under the auspices of the World Business Council for Sustainable Development in our quest for sustainability.

This level of participation reflects the multi-faceted approach the cement industry has adopted towards climate change. **It is the view of the industry that a national emission trading scheme that can be linked to a "global" scheme is another "tool in the toolbox" that may well assist the industry to continue to reduce its greenhouse footprint.**

From a global context the Australian industry, while small in size, has a high uptake of best technology and has remained price-competitive with our closest neighbours. **Retaining this competitive position with our Asian neighbours remains a critical area of importance and is potentially the most difficult challenge for the development of any national emissions scheme.** Since the inception of the

European emissions trading scheme the Australian industry has closely monitored the experiences of the European cement industry which shows that carbon dioxide leakage has occurred due to inadequacies of trading scheme design that do not adequately address competitiveness. This submission raises the issues and concerns relevant to emissions trading schemes and Australian industry.

Additionally the CIF believes the Garnaut Climate Change Review has the opportunity to recommend a national climate change policy framework that will address jurisdictional responsibility across all levels of government and to set criteria by which climate change policy should be considered. Removal of many existing, and avoidance of new, emissions abatement policies, programs and regulations will be essential if economic costs are to be minimised.

This submission has been prepared with consideration of the Terms of Reference set out for the Garnaut Climate Change Review by Australia's State and Territory Governments on 30 April 2007.

The CIF welcomes the opportunity to socialize our thoughts with the Garnaut Climate Change Review and we look forward to our further consultations on this matter.



Robyn Bain
Chief Executive

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What should a National climate change strategy look like?

Climate change is a problem of consumption by society. To address climate change effectively, a broad portfolio of approaches that deals with the root causes is required. Industry carries responsibility to be as efficient as possible in its use of energy and materials, but does not carry influence in the realm of population policy or consumer life-style choices that ultimately result in the demand for its products. These aspects are properly the responsibility of society and governments, and should not be forgotten in the race to find climate change solutions.

Unfortunately, the current media attention around emissions trading is feeding the perception that an emissions trading scheme is the sole solution. An emissions trading scheme clearly has a proper place but will only ever be one component of an effective national climate change strategy.

From a generic industry position, we believe that an effective climate change strategy should incorporate mechanisms focused on addressing the impediments to, and driving improvements within the following aspects:

Operational excellence: driving maximum operational efficiencies from existing operational assets (plant, equipment, buildings and vehicles). Driving operational efficiencies usually provides the lowest cost opportunities for business. For energy intensive industries where energy costs are significant, such practices are usually embedded within current operational standards. Mechanisms that can drive the best operational efficiencies from existing assets include:

- **voluntary efficiency programs,**
- **energy-labelling schemes** (consumer education), and
- **legislated mandatory efficiency programs or standards.**
- Life cycle assessment-based **building standards;**
- **international technology partnerships** to facilitate operational excellence, technology adoption, development and sharing, and workforce skills development (e.g. the Asia Pacific Partnership for Clean Development and Climate (APP) and its various projects);

The impediments that industry faces in achieving operational excellence include:

- capacity and workplace skills shortfalls;
- Access to operational capital.

Adoption of best available technology: driving adoption of the best technology available for a given industrial process line. Mechanisms to drive the uptake of best available technology include:

- **emissions trading schemes;**
- **CO₂-labelling schemes** (consumer education);
- reductions in red-tape, particularly **improvements in planning and regulatory processes;**
- **sectoral agreements;**
- national sectoral **goals and targets;**
- improved **tax treatment for capital** spending;
- **international technology partnerships** (e.g. APP).

Impediments to the uptake of new technology are considered to include:

- technology knowledge/capacity and workforce skills;
- access to capital (the cost of and internal competition for);
- planning and regulatory impediments and associated costs; and
- achieving acceptable returns on investment.

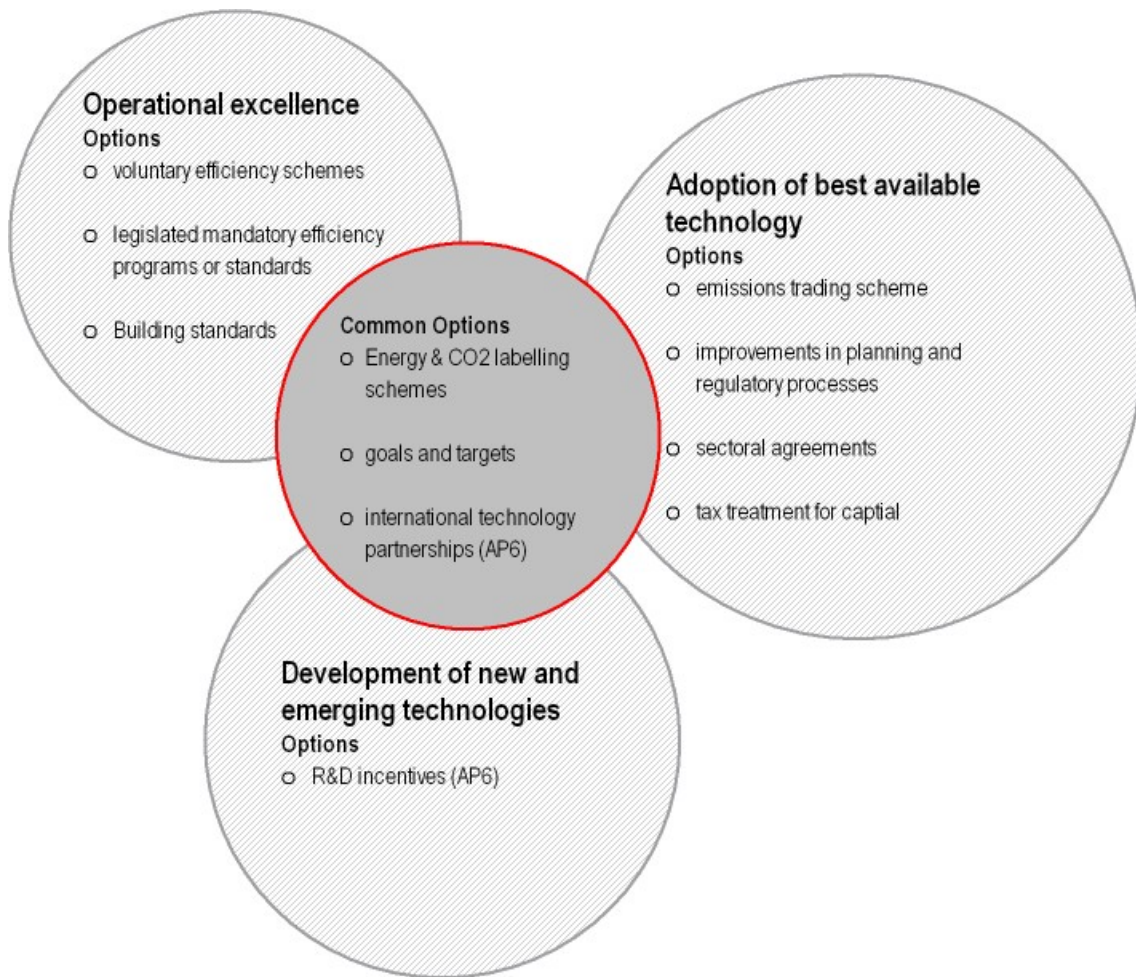
Development of new and emerging technologies: driving the research, development and demonstration (RD&D) of emerging technologies (e.g. carbon capture through geo- or bio-sequestration, improved waste heat recovery) that have the potential to provide the next step-change process improvements. Mechanisms to drive the uptake of best available technology include:

- improved **RD&D incentives;**
- **international technology partnerships** (e.g. APP).

Impediments to the discovery of new and emerging technologies include:

- the small scale of Australian industry and commensurate lack of RD&D funding
- technology knowledge/capacity;
- inadequate government incentives and insufficient risk returns;
- shortfalls in RD&D funding;
- negative community perceptions to new technologies

Figure 1: National climate change strategy options



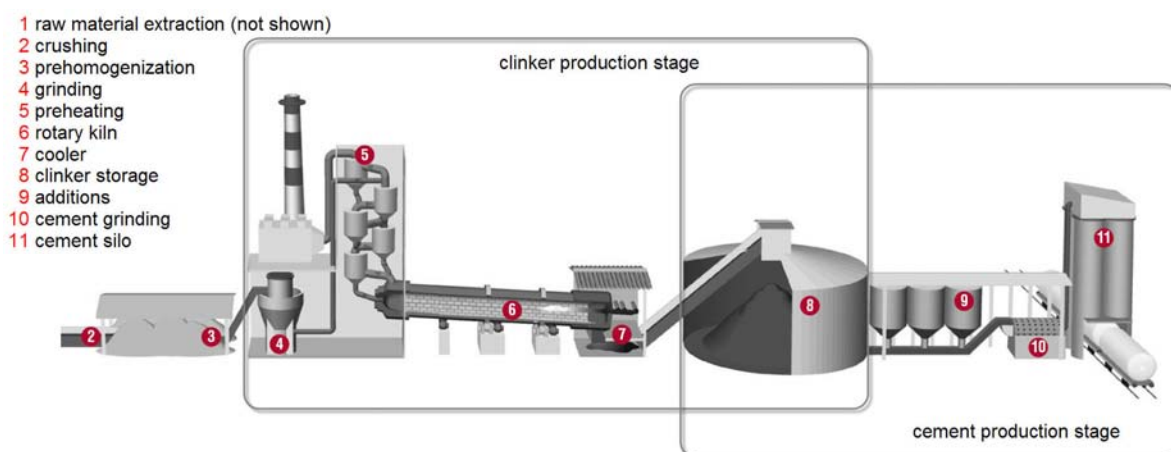
Relevant aspects of cement manufacture

It is important not to confuse cement with concrete. In essence, cement is a binding agent. When mixed with water, it sets then eventually hardens into a strong, solid mass. Along with sand, aggregate and water, cement is one of the basic constituents of concrete, reacting with the water to bind all the ingredients together. The most widely used cement in Australia is Portland Cement, the familiar fine grey cement powder used for concrete and mortars around the home and on building sites. A range of specialty cements are also produced for the local marketplace, delivering varying technical properties (such as high strength and shrink resistance) or specific colourings and finish qualities.

Cement manufacture is a two-stage process (refer Figure 2). The first stage involves the grinding and homogenisation of critical proportions of limestone, with silica, alumina, and iron oxides. These raw materials are ground to a fine raw meal which is pyroprocessed, at temperatures of 1,500°C, to form complex calcium silicates and aluminates constituting a black, nodular, intermediate material known as clinker. The second stage of cement manufacture involves the intergrinding of clinker with a small proportion of gypsum, to yield the grey, fine powder known as cement.

The first stage (production of clinker) requires; electricity for crushing, grinding, kiln operation and materials transport, and significant amounts of fuels, traditionally gas or coal to provide the thermal energy needed to achieve the required reaction temperatures. The calcination of limestone, an initial reaction which occurs within the kiln, also liberates carbon dioxide. Together, indirect electricity emissions and thermal energy emissions account for 47% of cement manufacturing carbon dioxide emissions. The calcination of limestone, a unique aspect of cement manufacture, accounts for 53% of carbon dioxide emissions. Together with cement's low value to weight ratio, which results in an effective high carbon dioxide emissions per unit of sales revenue, a carbon price mechanism has significant potential to have a disproportionately high impact on our industry.

The conversion of clinker to cement requires electricity for grinding and material transport operations, and is ultimately responsible for about 5% of overall carbon dioxide emissions.

Figure 2: The cement manufacturing process

Integrated cement manufacture refers to operations where both stages of manufacture are conducted. Australia has ten integrated cement plants and an additional five clinker grinding plants.

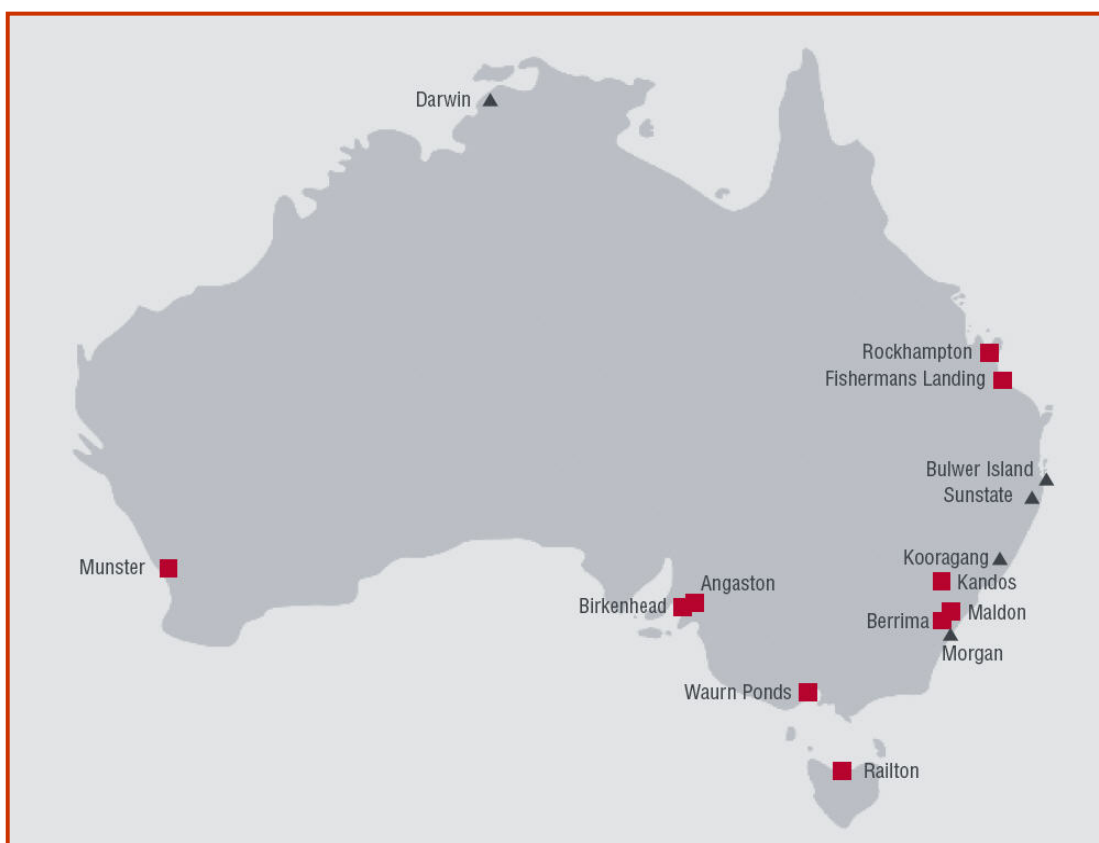
As cement has a low value to weight ratio, it is manufactured close to raw materials and markets. Where inter-state trade occurs, economies of scale are maximised by transporting by ship. The Australian industry is segmented geographically, with one dominant producer in each State.

Figure 3 shows that the majority of Australian manufacturing facilities are located on the east coast. This is due to the proximity of end users and the size of demand in those markets.

It is important to note that the intermediate product clinker lends itself to more efficient transport by shipping than does cement, and therefore international transfers are largely made up of clinker. It is also worth noting that the capital cost of plant required for this second manufacturing stage is typically of the order of 20% or less of the capital cost of an integrated cement plant. Currently the Australian industry can address domestic supply shortfalls simply by importing clinker.

In summary, for the cement sector, a carbon price mechanism has significant potential to have a disproportionately high impact given:

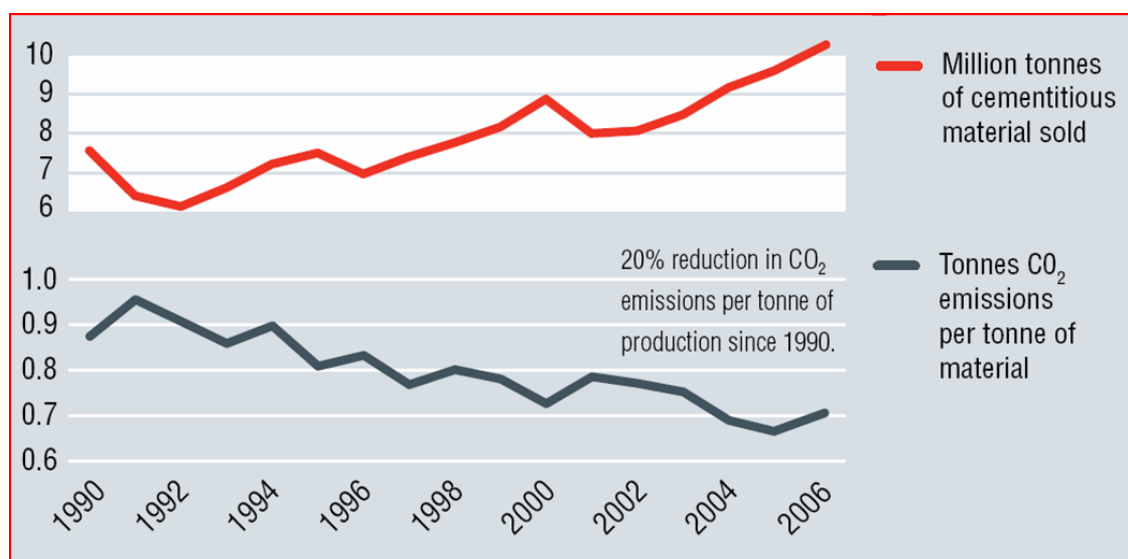
- the significance of calcination emissions;
- the effective high carbon dioxide emissions per unit of sales revenue; and
- the seaboard location of Australian cement markets.

Figure 3: Location of Australian cement plants

Cement industry action on climate change

The Australian cement industry believes that early action is a critical element in addressing climate change. The CIF has been an active member of the Australian Government's Greenhouse Challenge Plus program since 1997 and through this voluntary, technology-based program has maintained carbon dioxide emissions at 103% of 1990 levels while increasing production by 33 %.

From a business-as-usual baseline, **abatement projects initiated by the industry have resulted in reductions of over 1.5 million tonnes** of carbon dioxide per annum – equivalent to taking some 6 million cars off Australia's roads. This also equates to a 20% reduction in carbon dioxide per tonne of cementitious material sold – a measure which better reflects the efficiency gains attributable to our industry, independent of market fluctuations – see Figure 4. We believe this abatement effort to be significant particularly given the 33% increase in cementitious materials sold into the market over the same period.

Figure 4: Cementitious material sales and CO₂ emissions

The industry is continuing to seek out new opportunities to reduce carbon dioxide emissions through more energy efficient technology as well as addressing better energy efficiency within its transport sector. At the 2005 Greenhouse Challenge Plus conference in Canberra, the CIF received a special commendation for outstanding contribution to greenhouse action.

The CIF is also an active participant within the Cement Sector Task Force of the Australian government's Asia Pacific Partnership for Clean Development and Climate. The Partnership consists of Australia, China, India, Japan, the Republic of Korea and the United States and was brought into effect on 28 July 2005. A key focus of the partnership is to facilitate the development, diffusion, deployment and transfer of existing, and emerging efficient technologies (2006a, *Asia-Pacific Partnership on Clean Development and Climate – Charter*, Inaugural Ministerial Meeting, Sydney, January).

Partnership economies currently account for about 45 per cent of global population, 55 per cent of global economic output and 49 per cent of both global energy use and greenhouse gas emissions. The significance of the partnership economies in global economic and energy markets means that actions by just six countries to develop and deploy low emissions technologies could substantially mitigate growth in future greenhouse gas emissions. The partnership also brings together considerable interregional expertise in a broad range of energy efficient and low emissions technologies.

A key aim of the partnership is to use expertise and experience in industry, research communities and governments in bringing cleaner technologies to markets. Actions under the partnership include technology-based research, development and demonstration, exchange of information and expertise, dissemination of best practice technologies and provision of a forum for high level policy dialogue.

In 2005, the CIF developed a model to assess the opportunities for uptake of new technology and, with certain assumptions, used this model to forecast the effect of new technology on industry sustainability performance parameters out to 2012.

Figure 5: Australian Cement Industry forecast performance under BAU and BAT scenarios

Indicator	2004	2012 BAU	2012 BAT
Electricity (kWh/t cement)	106	96	89
Fossil fuel (GJ/t cement)	3.6	3.3	3.3
Alternative fuels (per cent substitution)	6	23	26
Raw materials (per cent substitution)	2	4	8
SCMs (per cent substitution)	22	29	29
Greenhouse gas emissions (tCO ₂ /t cement)	0.824	0.757	0.736

Note: kWh/t = kilowatt hours per tonne; GJ = Gigajoules; SCMs = supplementary cementitious materials; tCO₂/t = tonnes of carbon dioxide per tonne.

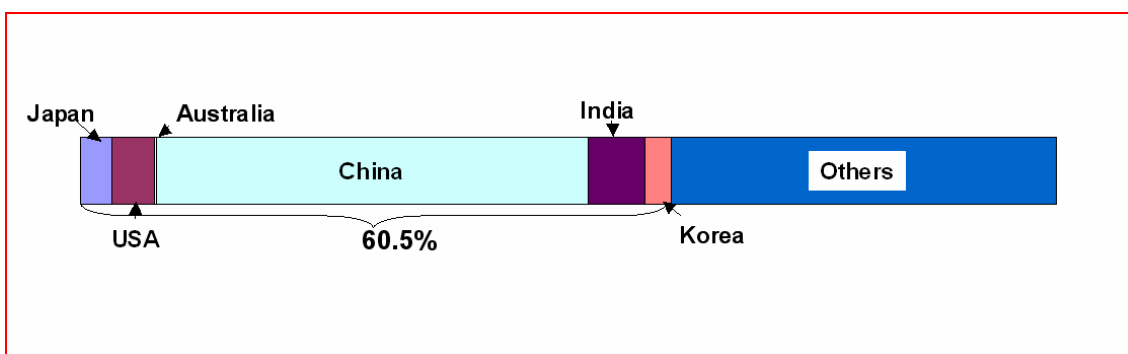
The report also forecasts that under an expected business as usual (BAU) scenario, an estimated \$150M of capital expenditure would be spent on technological improvements to 2012 yielding a 8% further reduction in GHG intensity. While, to achieve best available technology (BAT) performance, an additional \$500m in capital expenditure would be required, resulting in only a further 3% reduction in GHG emissions.

Besides highlighting the substantial technology investment that has already been committed by the Australian cement industry, this assessment suggests that the adoption of remaining commercially-available technologies by the Australian cement industry is unlikely to be driven significantly by an ETS. We would expect that this situation will vary for different sectors, where an ETS may well be efficient in driving the uptake of available technologies; but for the cement industry, and particularly in the near term, we believe that mechanisms that drive RD&D are currently the imperative.

The Australian cement industry in context

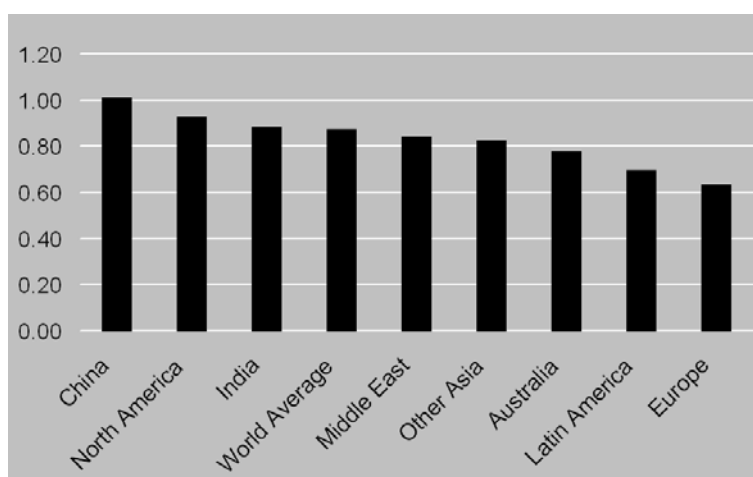
The Australian cement industry is an energy-intensive, domestic industry producing 10 million tonnes of product each year. We are also a trade-exposed (import-competing) industry, competing with imports from Australia’s south-east Asian and Chinese neighbours - neighbours with a manufacturing capacity well over 150 times that of Australia’s. Data from the APP secretariat (Figure 6) provides a useful representation of the relative scale of the Australian cement industry in terms of production.

Figure 6: Global cement production (2005)



The Australian cement industry has also been a significant adopter of best practice manufacturing technology and this is reflected in Figure 7.

Figure 7: Regional Differences in Carbon Intensity (t CO₂/t cement)¹



¹ Adapted from L. Price & E. Worrell, *Global Energy Use, CO₂ Emissions and the Potential for Reduction in the Cement Industry*, IEA, Paris 4-5 September 2006

In summary, the Australian cement industry:

- is a small domestic producer located geographically within a very large, regional market;
- is by comparison, a highly carbon efficient producer of cement; and
- is trade-exposed to small fluctuations in regional surplus capacity.

General Comments:

1 What would constitute a workable global emissions trading scheme?

The CIF recognises the need to reduce global greenhouse gas emission, and we maintain that such reductions must occur without undue risk to the competitiveness of the local Australian cement industry.

The introductory comments to this paper highlight the energy-intensive, trade-exposed and carbon efficient nature of the Australian cement industry. We consider that **energy-intensive, trade-exposed industries such as cement are most likely to incur investment restrictions and inevitably carbon leakage should a carbon price result in Australian cement becoming less competitive in the Australian market.**

For the purposes of providing comment on the design aspects of a national emissions trading scheme (ETS), the CIF adopts the following basic policy principles:

- **economic efficiency**, requiring an ETS to:
 - promote economic growth through efficient allocation of resources
 - be as broad-based as possible in its coverage of greenhouse gases, sources and sinks, considering the practicalities of inclusion
 - be trade and investment neutral in a way that does not expose Australian industry to costs its competitors do not face
 - take a long term perspective
 - be consistent with other national policies and effectively coordinated across all jurisdictions
 - have streamlined, efficient and effective administrative arrangements which aim to minimise transaction and compliance costs;

- **environmental effectiveness**, requiring an ETS to:
 - achieve emissions reductions
 - avoid emission 'leakage' to other countries, such that emission savings made in Australia are not diluted by increased emissions elsewhere; and

- **equity**, which requires an ETS to:
 - distribute the cost burden equitably across the community
 - take account of differing sectoral circumstances
 - not discriminate against new entrants to Australian industry nor disadvantage "early movers" in Australian industry who have implemented abatement measures.

Advantages of a global scheme

Clearly, the issue of maintaining competitiveness can be addressed through the introduction of a global scheme. Within this section we provide some general comments about what we consider are some of the critical scheme elements that should be considered. However, in the absence of a truly global scheme, mechanisms must be introduced that effectively address the competitiveness issue. We have provided our comments in relation to such mechanisms as well as other scheme design elements within the section addressing “domestic action to prepare for a workable global scheme”.

The definition of “global”

An important aspect of coverage is the definition of the term “global”. The simplistic and clearly the environmentally-preferential response to this is that all countries should be included. However, given that such an idealist outcome is unlikely, it becomes important for our industry that all current and potential competitors be included within the scheme, or alternatively that the scheme incorporates measures to ensure competitive parity.

CIF notes the Australian Industry Greenhouse Network’s (“the AIGN”) assessment that the only conceivable global scheme is a decentralised one - a network of differing national or regional schemes linked progressively by unilateral decisions to trade in the permits and credits of other schemes, as an alternative way of acquitting local emissions, and offering a real prospect of curtailing and reducing the growth of GHG emissions worldwide.

AIGN goes on to state that there is no reason why an Australian scheme could not fit easily, and at any time, into a growing constellation of global trading regimes.

Table 1 provides an outline of the key design elements of an ETS that our industry considers important but we acknowledge that there are other design elements such as potential scheme start; taxation implications (e.g. the application of GST and capital gains tax); banking and borrowing; penalties; assistance to other groups; institutional arrangements, etc, which from our current perspective are less critical and therefore we provide no further comment.

Table 1: Emissions Trading Scheme Key Design Parameters

Key Parameter	CIF Policy Position
Scheme type	A “cap and trade” or target approach is considered the most environmentally efficient ETS type;
Scheme coverage	<p>Efficiency, effectiveness and equity criteria demand comprehensiveness in scheme coverage. We therefore support a coverage of gases, sectors and sinks that is as broad as possible subject to emissions being able to be monitored and reported accurately and efficiently.</p> <p>Also, as with mandatory energy and emissions reporting, we hold to the position that obligations should fall at the company level for the direct GHG emissions from the facilities they control, rather than at the facility level. This would encompass a more comprehensive range of emissions sources.</p>
Emissions Cap (target)	<p>The scheme cap should be consistent with a long term reduction target extending to the middle of the century, if not longer; and it should comprehend that many current emissions-sensitive investment decisions relate to assets that may be operating beyond mid-century;</p> <p>The scheme cap must recognise the importance of energy-intensive industries in maintaining the prosperity of all Australians, the cap must be geared to ensure a manageable transition to a lower emission economy, avoiding prejudice to the competitive advantage Australia draws from its endowment of fossil fuel resources;</p> <p>The cap must be capable of amendment in order to respond to evolving knowledge, not only of the science of global warming and the evolution of emissions reduction technologies but also of the economic and political implications of climate policy measures adopted in Australia, in other countries and by the world community generally.</p>
Permit Allocation	Permit allocation should be linked to a broader “carbon-intensity” baseline rather than an “energy-intensity” baseline which is applicable to all sectors and will better address sectors such as cement . Rules will need to be established to ensure equal treatment for new entrants and incumbents alike.
Investment certainty	We consider that the objective of providing certainty for investors, and the community as a whole, can be met if: the permits to be traded provide secure property rights; and, there are sufficient permits to trade (or create options over) with future dates that align with the long

Key Parameter	CIF Policy Position
	investment horizons associated with adopting emission reducing technologies. CIF agrees with AIGN that the suggested market framework should have a long term horizon.
Penalty	Penalties are an important consideration in relation to the effectiveness and equity of the scheme through the establishment of a ceiling to the trading price and by offering long term certainty. While a low penalty may mitigate international competitiveness impacts, it may detrimentally affect scheme effectiveness and vice versa.
Credit for early action	We consider that equity considerations are able to be addressed through the use of carbon intensity baselines within the allocation mechanism.
Maintaining competitiveness	Mechanisms that deal with trade-exposure in an equitable manner are feasible, but that this requires greater engagement with and by government. We believe that greatest equity will be achieved where competition recognises the cost of carbon.
International linkages	We see no significant impediments why an Australian scheme could not fit at any time into a growing “constellation” of global schemes. There is merit in adopting a common terminology or ‘language’ wherever this is possible. Such an approach would offer real prospects of curtailing and ultimately reducing GHG emissions worldwide.
Offsets	Offsets should be allowed where they result in a net GHG emissions benefit, and should be awarded to the party taking the risk. For example, cement kilns burning wastes that would otherwise be landfilled and generate GHG emissions.
Sovereign Risk	The extent of sovereign risk associated with annual and periodic regulatory decisions in relation to both eligibility for permits and the extent of allocation will be an issue for owners of existing assets as well as for new investors. We would consider that discussions with the responsible government body(ies) can provide a way forward to negotiate durable processes and guidelines that quantify the extent of regulatory discretion relating to allocation eligibility and extent.

2 How have existing emissions trading schemes delivered against key desirable design elements?

The European Emissions Trading Scheme (EU ETS) became operational in January 2005. In the first phase (2005 to 2007), coverage of the EU ETS included power generation, mineral oil refineries, coke ovens, ferrous metal processing, cement, glass, ceramics, and pulp and paper. The scheme also covers emissions from large combustion installations greater than 20MW. Emission allowances have been allocated by governments to companies in those sectors to a large extent based on past emissions, discounted to meet Kyoto targets.

The EU ETS has made world headlines, with both good and bad news stories. The good have focused on the establishment of the world's biggest greenhouse gas market, while the bad have been focused on severe price volatility. There are several lessons to be learnt from this first year experience:

1. At this stage, divergent views appear to exist as to the environmental outcomes achieved by the EU ETS;
2. The market reacted to fundamental information: allowances were traded, prices increased when the market expected to be short in allowances and prices decreased with an expected long position, emissions reductions were realised when they were the cheapest option: i.e. the ETS contributed to achieving its economic objective;
3. Initial allowance allocation has been reported as being generous and resulting in unintended consequences such as low carbon prices and ineffective forcing behaviour. This is attributed partially to inaccurate knowledge of the baseline, and partially because the allocation methodology (based on emission grandfathering) encouraged higher emissions; i.e. adequate knowledge of the baseline is of utmost importance before commencing an ETS; and
4. The reliability of information in the market during the commitment period needed improvement to enable market analysts and participants to have better forecasting and pricing.

Learning's from the EU ETS highlight the importance of ensuring that sufficient time and resources are devoted to design the scheme, and that the lessons from other schemes are taken into account. It should be recognised that it took at least five years for the final design of the EU ETS to be completed by a well-resourced and highly-motivated entity, though this did involve negotiating the significant hurdles of reaching agreement with all member states as well as cascading the scheme through to a national level.

Phase 1 of the EU ETS was always intended to be a "learning by doing" phase – a fact that is easily overlooked. Nevertheless, there have been inequities and unacceptable distortions that have paradoxically and regrettably thwarted full achievement of its purpose. The use of grand-fathering of emission allowances has led inevitably to the under-performance of the trading scheme as a whole, and inconsistencies in grand-fathered allocation under EU ETS NAP rules have caused seriously unintended outcomes. Efficient installations of companies taking early action have been subjected to penalties and the worst-performing installations have been rewarded with a potential to create surpluses.

These findings, relating to the importance of information, cement sector cost increases, and carbon leakage, are very relevant to Australia. **They indicate that if an ETS was applied to the Australian cement industry with no arrangements implemented to ensure equitable international competition, then the future of Australia's cement manufacturing industry would be at risk.**

Finally, we note the following observation in relation to the requirement for additional measures, from the Centre for European Policy Studies:

"As the EUETS on its own will most likely not provide sufficient incentives for the development of new breakthrough technologies, the EU and member states should start exploring what additional measures are needed, notably including R&D." (Source: EU Emissions Trading Scheme: Taking Stock and Looking Ahead European Climate Platform, Centre for European Policy Studies)

Core Factors:**1. What are the regional, sectoral and distributional implications of climate change and policies to mitigate climate change?****Implications for Australia of a carbon constrained future**

It should be noted that there are existing government policies that impose a carbon constraint with implications felt mostly through electricity pricing. Future implications will depend upon the scale and speed of implementation of the constraint, the extent to which early action has already been taken by particular industry segments or by particular companies within an industry segment; the cost and availability of existing technological solutions, and the cost and potential for developing emerging technologies.

If the scale and speed of implementation is too great several exposures are created: industries and/or companies taking early action e.g. those already utilising best available technology, will be penalised in their needing to invest in new or emerging technologies at a potentially punitive cost. These new technologies may either not be forthcoming or may be of high cost or of uncertain reliability. These cost penalties may be extreme and create unfair advantage between companies either within industry segments, or between competing industry segments, and may also create disadvantage to trade exposed and energy intensive industries. The nature of the Australian economy is emissions intensive being dependent upon cheap, coal-based energy sources and therefore has a high exposure in a carbon constrained future.

Australia seeks growth both organically and through immigration. As a result future growth is predicted, directly increasing its domestic carbon footprint.

Global demand is expected to continue through the current super cycle (China / India). Australia's natural resources sector will be expected to provide for this growth, once again increasing the domestic carbon footprint. The ability of home industry to pass through carbon cost on its exports will be fundamental to sustaining the economic growth of Australia.

The key elements likely to affect the cost of reducing emissions over time

Key elements are: the availability of suitable GHG emission reduction technologies (see above), the relative costs of such technologies, the availability of a skilled workforce necessary to sustain technological change, the ability to create and use carbon offsets, the availability of incentives to stimulate greenhouse gas reduction, the availability of less carbon-rich raw materials and product substitutes, access to low emission energy supplies, the ability to promote investment through viable projects, capital availability, viable domestic companies and communities capable of sustaining and managing the required technical change; the willingness of all stakeholders to pay for their contribution to their respective carbon footprints.

Factoring a carbon price into investment decisions

The cement industry has been proactive in reducing emissions within existing commercial viability requirements and takes into consideration carbon to varying degrees within project assessment. A carbon price is indirectly factored in through the cost of energy, but currently no member cement companies directly factor a carbon price into investment decisions, other than for projects associated with schemes such as the NSW Greenhouse Gas Abatement Scheme. The potential risk to carbon exposures are increasingly being factored into long term supply agreements.

2. What are the economic and strategic opportunities for Australia from playing a leading role in our region's shift to a more carbon-efficient economy, including the potential for Australia to become a regional hub for the technologies and industries associated with global movement to low carbon emissions?

Australia is positioned well to respond to or influence any emerging workable global scheme?

With the current level of extensive consultation and debate in relation to emission trading and climate change responses, particularly given the State's National Emissions Trading Scheme Discussion Paper, and the Issues Paper released by the Prime Minister's Task Group on Emissions Trading, it is fair to assume that the knowledge and capacity of stakeholders in relation to scheme design elements is being greatly enhanced.

For a number of reasons, Australia is in an excellent position to influence an emerging workable global scheme. The introduction of (albeit flawed) state-based schemes, the significant adoption of voluntary joint government/industry approaches, and the substantial cooperative elements arising from international programs such as Asia-Pacific Partnership for Clean Development and Climate (APP), within which Australia has a creditable standing, all provide substantive capacity building for Australian industry, governments and the public. Australia's substantial involvement and leadership in the APP establishes a valuable precedent for Australia's regional influence.

In relation to knowledge of our emissions, the CIF has, since before 1990, maintained its own sectoral GHG emission inventory and, through the Greenhouse Challenge Plus program maintained a member focus on GHG abatement projects. Based on this experience, we have advocated the need for a single, streamlined, national reporting approach to provide a rigorous, transparent, and nationally consistent energy and greenhouse reporting system, and we have strongly supported the Council of Australian Government (CoAG) decision of July 2006, to further such an approach.

As a major importer and exporter, Australia may hold some position to influence an emerging global scheme. Australian industry, including the cement industry has significant experience and capacity in relation to emissions monitoring and reporting. The national database of greenhouse emissions and its veracity will be immensely important to overcome the information deficiencies that have been highlighted by the other schemes.

We believe that Australia should continue to work on the development of an emissions trading scheme in a steady and collaborative manner.

3. What are the costs and benefits of Australia taking significant action to mitigate climate change ahead of competitor nations?

Implications for Australia's international competitiveness

An ETS that imposes costs on industry in relation to its GHG emissions or energy use will have direct consequences for industry competitiveness. The most emissions intensive (often energy intensive) industries bear the initial cost, but the location of the ultimate cost burden depends on price elasticities, upstream and downstream (leaving aside any regulatory requirements). Some industries are able to readily pass on additional costs to customers or are able to share the cost burden with suppliers. Others are able to pass on and recoup only small proportions of cost increases.

In the carbon penalty context, those industries least able to pass on the additional costs are those whose competitors are not burdened to the same extent, notably competitors in overseas countries which have not imposed (and may be unlikely to impose) a comparable penalty. This highlights the problem of any ETS or other emissions reduction regime that is not global in coverage; and the smaller the global sub-group participating in such a regime, the greater the competitiveness issue for the trade exposed industries.

An important characteristic for the Australian cement industry is that our competitors, almost without exception, are countries in the developing world where the prospect of GHG emissions penalties being imposed is very distant. With respect to GHG emissions and given the relative carbon efficiency of the Australian industry, there is little or no global environmental benefit in locating these industries in Asia or elsewhere, in preference to Australia. This is the 'carbon leakage' problem which together with the added emissions arising from transport is a very real problem.

Addressing the competitiveness issue

In order to maintain the competitiveness of trade-exposed Australian industries while progressing with the implementation of a national emissions trading scheme, a number of generic policy possibilities have been discussed, such as:

- 'Free' allocation for existing and new investment for as long as is needed to trade exposed, emissions intensive industry to offset the distortionary erosion of competitiveness until there is an universal global scheme;
- annual compensatory allocation of permits to the value of the competitiveness penalty and tied to continuing production.

Note: The offset for erosion of competitiveness will need to cover both the costs of the emissions trading scheme and the costs of schemes such as the 20% renewable target which, for as long as it is retained, may be responsible for higher electricity prices than the emissions trading scheme. Again there should be no loss of economic efficiency or market transparency in these allocations;

CIF believes that an option which deals with emissions attributable to the manufacture of imported cement in an equivalent manner to emissions from domestic manufacture (where these imports originate from a nation which has not adopted a carbon constraint), provides an equitable and workable approach. This option provides for the existing level of imports required to meet home market demand not to be penalised where manufacture occurs within a carbon-constrained economy.

In an equivalent manner to imports, the treatment of exports would also need to be synchronised with the receiving nation, taking into account whether or not the destination country operated under a carbon constraint.

The cement industry can see a number of benefits from such an approach – the primary of these being the equitable treatment of imports and exports that takes into account the existence of a linkable carbon constraint. We would also suggest that such an approach might drive consideration of the carbon intensity of products by traders and suppliers, and increase knowledge capacity through reporting and verification requirements and thereby effect an extension of a carbon pricing signal to nations without a similar trading scheme.

While the CIF has not sought any legal or trade advice on this proposal, we consider that such a mechanism may provide a workable alternative to addressing the international competitiveness issue and would be very keen for the Garnaut Climate Change Review to undertake further assessment of this approach.

Costs and benefits to Australia taking significant action to mitigate climate change	
Costs	<ul style="list-style-type: none"> • Potential impact on the competitiveness of trade exposed emissions intensive industries (TEEI's)
Benefits	<ul style="list-style-type: none"> • Potential may exist for capacity building and there is seen to be a particular opportunity to abolish/phase out existing disparate duplicative state schemes which will provide clarity and administrative relief for industry. • Whilst having a small economic and carbon footprint in relation to engaging in emissions trading, Australia's reputation for embracing change will assist participation in future discussions on design aspects relating to the future globalisation of emissions trading. • The scale of Australia's exported natural resources may also provide influence to drive international ETS linkages. • Address the rising swell of corporate and consumer awareness and demand for carbon reduction and emissions trading

Implications of ETS adoption on current GHG measures.

As per our discussion in relation to what a national climate change strategy should look like, an emission trading scheme is one of many tools that should be utilised to address the climate change problem. In many cases an ETS will be complementary to existing (and potentially future) measures, but for those existing trading-based or related schemes (e.g. NSW greenhouse gas abatement scheme, mandatory renewables/fuel switching schemes such as the Qld 13% gas scheme), a national or "global" ETS will render these obsolete. The CIF considers that such schemes must be absorbed within any national or "global" scheme and that legislation must ensure that duplicative partial schemes do not arise in the future.

It is also likely that, in the event of a successfully trading carbon market, those mandatory and voluntary initiatives such as Greenhouse Challenge Plus, and the Energy Efficiency Opportunities program will become redundant, although the networking, advocacy and technology transfer elements of such programs should be reviewed for possible retention within some consolidated program.

Summary

The Australian cement industry recognises the threat that climate change poses to our natural environment. We have been working diligently on this challenge for well over a decade and achieved, by voluntary measures, reductions in the carbon intensity of our product of 20% per tonne.

Our participation in GHG abatement through commitments to Greenhouse Challenge Plus; our Cement Industry Action Agenda; the Energy Efficiency Opportunities program and the Asia Pacific Partnership on Clean Development and Climate (APP), reflects the multi-faceted view that we have in responding to climate change. It is the view of our industry that a national emission trading scheme that can be linked to an evolving “global” scheme is simply another “tool in the toolbox”, that we hope will further assist the industry to continue to reduce its greenhouse footprint.

Critical for our industry is the issue of maintaining competitiveness in an import-competing environment whilst acknowledging that Australia imports about 10% of product to meet the current supply:demand balance. We believe that opportunities exist to address this issue in an equitable and practical manner and urge government to explore options in a thorough and steadfast manner.

The cement industry is keen to provide any further information that the Garnaut Climate Change Review may require and we look forward to continued consultation on this matter.