

**Plastics and Chemicals Industries
Association**



**Submission to the
Senate Committee on Climate Policy**

April 2009



Plastics and Chemicals Industries Association

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1. Executive Summary

The Plastics and Chemicals Industries Association (PACIA) is the peak national body representing the Australian chemicals and plastics sector:

- Turnover in these sectors is approximately \$32.5 billion.
- Industry value added is \$9.6 billion.
- Wages and salaries \$4.7 billion.
- Employment in the sectors is about 85,000 people directly.
- The sectors represent between 9 and 10 per cent of total Australian manufacturing activity.

This submission primarily focuses on the following key issues:

- The strategic importance of the chemicals and plastics industries.
- The recognition that climate change is a global problem requiring a global solution.
- Emissions Trading Scheme key design parameters that are of vital importance to the Chemicals and Plastics industries.
- The impact of carbon pricing on small-to-medium sized companies (SME's).
- The treatment of feedstocks where hydrocarbons are not combusted, but are sequestered in product.

PACIA supports:

- Fair and equitable international action to address the climate change, with the Federal Government taking the lead role;
- The introduction of an emissions trading scheme (ETS) as the central policy tool to find the lowest cost abatement opportunities across the economy;
- An ETS that recognises and responds to the impacts on industry (in particular the trade exposed sectors) and households;
- Comprehensive, clear and consistent legislation to give effect to an ETS as soon as practicable to provide certainty to industry;
- Taking the appropriate amount of time to ensure that:
 - the impacts of the scheme on industry and households are understood;
 - international developments are fully taken into consideration;
 - legislation and accompanying regulation can be fully analysed.
- Complementary measures including:
 - support for RD&D;
 - action to address the non-covered sectors (such as agriculture) in an ETS.

2. Introduction

The Plastics and Chemicals Industries Association (PACIA) welcomes the opportunity to make a submission to the Senate Select Committee on Climate Policy.

PACIA is the peak national body representing the diversity of companies in the chemicals and plastics sectors:

- Turnover in these sectors is approximately \$32.5 billion
- Industry value added is \$9.6 billion
- Wages and salaries \$4.7 billion
- Employment in the sectors is about 85,000 people directly
- The sectors represent between 9 and 10 per cent of total Australian manufacturing activity.

The plastics and chemicals industries, their supply chain relationships, R&D and skilled workforce are central to Australia's current high income economy and in particular, to attaining an environmentally sustainable future.

According to a 2003 Report by Professor Brain¹, Australia is one of very few countries in the world where the full supply chain in plastics and chemicals industries is located domestically. These integrated industries feed into and underpin most industry and manufacturing sectors in Australia including but not limited to the automotive, furniture, agriculture, packaging and medical products industries.

Attachment 1 shows:

- Subsectors, industries and products framework of Australian Chemicals and Plastics
- Illustrative guide to the strategic value of the Chemicals and Plastics industries.

Further information on the Strategic Importance of the Chemicals and Plastics Industries are at Attachment 2.

Trade in plastics and chemicals is truly global, with over 80 countries reporting an industry with a turnover of more than \$US1bn. Commodity polymers are now traded on the London Metals Exchange.

As a consequence of the structure and size of the Australian market for chemicals, and freight costs from Australia, the chemicals sector in Australia is typically import replacement focused. Local producers lack the scale and economies of plants in other producer countries, but reliable, low-cost energy, comparatively lower capital costs (on depreciated plant) and production flexibilities that meet demands from local customers for low-volume, specialised products enable Australian companies to remain competitive in their own market.

Most of the growth in world chemicals productive capacity in recent years has occurred in Asia. In the past 15 years, Asia (other than Japan) has doubled its share of global chemicals production to one quarter of the total. As a consequence, Australian producers are particularly exposed to low-cost competition and the fluctuations of world markets, including extended periods of depressed prices.

The Australian chemicals and plastics industry is the world's 21st largest producer. Five of the world's current top 10 producers are from countries that do not have emission obligations under the Kyoto Protocol, including China and India. The largest growth area in the industry is in Asia and the Middle East (both of which are without emission constraints).

¹ The report can be provided upon request.

3. PACIA Position on Climate Change

PACIA supports:

- Fair and equitable international action to address the climate change, with the Federal Government taking the lead role;
- The introduction of an emissions trading scheme (ETS) as the central policy tool to find the lowest cost abatement opportunities across the economy;
- An ETS that recognises and responds to the impacts on industry (in particular the trade exposed sectors) and households;
- Comprehensive, clear and consistent legislation to give effect to an ETS as soon as practicable to provide certainty to industry;
- Taking the appropriate amount of time to ensure that:
 - the impacts of the scheme on industry and households are understood;
 - international developments are fully taken into consideration;
 - legislation and accompanying regulation can be fully analysed.
- Complementary measures including:
 - support for RD&D;
 - action to address the non-covered sectors (such as agriculture) in the ETS.

4. Global Action

Climate change is a global problem requiring a global solution. It differs to almost all other environmental problems in that the emissions do not only result in localised effects. Carbon emitted in Europe or China has the same effect as carbon emitted in Australia. As such, PACIA supports Australia undertaking its fair share of a global effort in line with its commitments made under the United Nations Framework Convention on Climate Change (UNFCCC).

The global nature of climate change highlights the importance of the upcoming negotiations in Copenhagen and the need to reach a comprehensive agreement that includes all major emitters, both in the developed and developing world. Without such an agreement, unilateral action by Australia runs the very real risk of simply rendering Australian industry uncompetitive with little or no global environmental benefit. Indeed, without such a comprehensive global agreement and should Australia's policy response result in significant negative impacts on the Australian economy, it is possible that Australia could send a signal to other nations that an emissions trading scheme is not the appropriate response or that countries would simply delay their response. It is important that we move forward without significant trade risk.

Australian leadership on climate change is welcome. This position is especially important given that the effects of climate change could potentially affect Australia more than any other country. However, as the White Paper recognises, climate change is a global problem and Australia cannot solve the problem by acting alone. The Australian plastics and chemicals sector is approximately 1% of global scale. With Australia's emissions representing some 1.5% of global emissions, there seems little benefit in designing a Scheme that materially punishes Australia's economic performance in a world where demand for the sorts of commodities produced in Australia will simply be produced elsewhere in the world. Developed countries clearly have a role to play in developing low emission technologies and in manufacturing goods that can reduce carbon emissions, but this will not be achieved by closing down those very industries that can deliver these benefits.

The competitive advantage of Australian industry has been underpinned by access to low cost energy. This advantage would not be eroded under a global agreement that leads to an international price for carbon. Assistance to trade exposed industries is critical to ensure that advantage is maintained over the transitional period.

PACIA would therefore submit that transitional assistance is not simply about managing the inevitable increases in costs imposed by the Scheme, but that it must also recognise the transitional period between Scheme commencement and a comprehensive global agreement. Government must not be under any illusion that capital is free to flow to any destination in the world and in many cases once industries are lost to Australia, particularly in manufacturing, it is highly unlikely they would return. It would be a truly perverse outcome if climate change policy achieved emissions reduction targets through trade exposed industries moving offshore only for those industries to re-appear elsewhere in the world without emission constraints and particularly with greater emissions.

On the question of the science, PACIA is not in a position to comment on the validity of one view point over another, but our view is that we accept that climate change is occurring. Similarly, we are not in a position to comment on the appropriateness of the proposed targets and whether it is too high or too low. What we can say is that the proposed target range of 5-15% below 2000 levels represents an enormous challenge for Australia given our projected population growth and the nature of our economy. This challenge is highlighted in the Treasury modelling in the extracted table below² (Targets and costs in 2020) showing that the costs to Australia in terms of GDP impact are some three times higher than the United States and more than four times higher than the Europeans:

	Target (% 1990 emissions)		Cost
	Change from Kyoto target	Change from 1990	Change in GNP (%)
CPRS-5			
Australia	-12	-4	-1.1
Canada	+17	+11	-1.1
Japan	-15	-21	-0.2
USA	n.a	+5	-0.3
EU	-27	-34	-0.4
Russia	-25	-25	-3.6
World			-0.7
CPRS-15			
Australia	-22	-14	-1.6
Canada	+5	-1	-1.5
Japan	-23	-29	-0.4
USA	n.a	-6	-0.4
EU	-34	-41	-0.6
Russia	-33	-33	-5.3
World			-0.9

5. Emissions trading versus other policy tools

Numerous policy responses to the challenges of climate change have been proposed, ranging from voluntary/co-operative approaches through to highly regulated measures. Of these approaches, PACIA believes that the central plank must be to establish a price on carbon in order to drive a change in the economy that results in a reduction of emissions to atmosphere. Markets are the most efficient way of delivering that outcome at least cost. The intent is that we would need to see a change in relative pricing between low and high emission products. Similarly, it is important that consumers see the full price effect in order to effect the change in behaviour and spending patterns required to deliver abatement. Any system that simply saw an overall and almost equal rise in prices would be ineffective.

² Australian, Economic cost as an indicator for comparable effort, Submission to the AWG-KP and AWG-LCA, March 2009

Therefore on balance, PACIA supports the introduction of an Emissions Trading Scheme, much along the lines of the Carbon Pollution Reduction Scheme, as the most effective and efficient means of reducing emissions at least cost to the economy. PACIA emphasizes that it has proposed a number of amendments to the CPRS which are discussed in greater detail in subsequent sections.

In implementing an emissions trading Scheme, PACIA supports the White Paper objective:

“...to meet Australia’s emissions reduction targets in the most flexible and cost effective way; to support an effective global response to climate change; and to provide for transitional assistance for the most affected households and firms”.

PACIA supports the undertaking of a regulatory impact statement (RIS) through a body like the Productivity Commission. The objective would be to try and quantify whether the ETS, or indeed any other policy tool, would meet the objective of reducing emissions to an agreed target at lowest cost.

6. From the Green Paper to the White Paper

In providing its submission to the CPRS Green Paper, PACIA focused on two key issues of vital importance to the chemicals and plastics Industries:

- Impact of the scheme on business; and
- The treatment of hydrocarbons as feedstocks where the embedded carbon is not combusted, but rather sequestered in product.

The table below identifies the key recommendations by PACIA and the responses in the White Paper:

PACIA Recommendations from the Green Paper	White Paper Position
<p>Emissions Intensive Trade Exposed Industries (EITE)</p> <ul style="list-style-type: none"> • Full transitional assistance is critical to the ongoing viability of the industry, and should take full account of both existing and new investment in trade exposed industries. • EITE assistance should: <ul style="list-style-type: none"> ○ be provided to all trade exposed firms and not be limited by an arbitrary cap (as per the current 30% proposal); ○ be provided as permits, not cash; ○ cover all direct emissions (i.e. Scope 1) and the costs passed through from non-trade exposed industries (such as electricity and feedstocks); ○ eligibility criteria should include a test for trade exposure; ○ not contain an emissions intensity threshold given the trade exposure test; ○ be estimated on a “contiguous facility” basis. • If government is to apply an emissions intensity test, revenue is fundamentally flawed. The use of an Earnings Based or 	<p>The White Paper made some amendments in response to concerns raised by industry, including:</p> <ul style="list-style-type: none"> • Increasing the total number of permits available to EITE industries to assist the transition, • Lowering the threshold for 60% assistance; • Including the “scope 3” emissions from the use of natural gas and ethane for use as feedstocks in the assessment of EITE eligibility; • The addition of a trade exposure test; and • The capacity to use a value add metric in determining EITE eligibility. <p>Although there has been some movement on assistance provided to the EITE sector, PACIA remains concerned that the impacts of the scheme on trade exposed industries remains misunderstood and that the response remains deficient.</p>

<p>Value Add measure would more effectively address the policy objective of ensuring that trade exposed industries are not disadvantaged.</p> <ul style="list-style-type: none"> The impact of the scheme on SME's (especially those that are trade exposed) has been given little attention or analysis. Most trade exposed companies ineligible for EITE assistance responded in a survey by PACIA at a carbon cost of \$20 per tonne, the only options was to absorb the cost with approximately 50% of respondents stating they may be forced to close. 	
<ul style="list-style-type: none"> The importance of the Climate Change Action Fund (CCAF) cannot be underestimated if trade exposed companies find themselves ineligible for EITE assistance. 	<p>PACIA welcomed the additional detail on the Climate Change Action Fund. The program appears to be consistent with PACIA's view that there should be three elements:</p> <ul style="list-style-type: none"> An education function; An auditing function; and Structural adjustment.
<ul style="list-style-type: none"> PACIA supports the proposal for "netting out" of hydrocarbons supplied as feedstocks where they are not combusted, but sequestered as product. 	<p>The White Paper supports PACIA's view and has established the Obligation Transfer (OTN) mechanism.</p>

7. Transitional Assistance

Chemicals and plastics production, and the conversion industry, is typically a high fixed cost and energy intensive manufacturing activity, and most chemicals and plastic products are extensively traded. Markets in Australia are generally considered mature, with low net growth. Manufacturing is often in high volume and low margin businesses. International markets are sensitive to the business cycle, to oil prices and to changes in market supply conditions (the commissioning of a new large-scale plant can cause a surplus, and depressed prices, for several years). In this highly competitive market, it is commonplace for world prices to be at or near marginal cost of production for extended periods.

In terms of the industry's energy use, the cost as a percentage of total production costs ranges anywhere from 2% to 70%, and is largely determined by the type of product and associated manufacturing process. For example, the relative input cost of energy (both electricity sourced on and offsite and fossil fuels used for feedstocks) for the production of industrial gases will be significantly greater than that used for the production of resins which is in turn greater than those for the manufacture of final goods. The variance in energy use holds true both within companies (for those producing multiple products) and across companies. Generally speaking, direct emissions in the sector are relatively small (noting that there are a number of companies with large direct emissions exposure), but the extensive use of (in particular) gas and electricity means the emission footprint is potentially high.

The bulk of the chemical and plastics industries are unable to pass on the costs of the Scheme, due to threatened or actual import competition. Product is sold under contract where customers are not committed to minimum purchase requirements and those contracts are typically directly linked to international prices.

7.1 Rationale for Assistance

In an ideal world, there would be a global price on carbon. However, we must be cognisant of the fact that, at least in the short to medium term, this is unlikely and as such the Scheme must be designed in such a way that effectively deals with the transition to a global price. The government has recognised this transition period through the proposal to provide assistance to trade exposed industry. Indeed, the measure only exists in recognition of this transitional period.

PACIA therefore welcomed the government's election commitment to provide assistance to EITE industries:

"A Rudd Labor Government will...establish specific mechanisms to ensure that Australian operations of EITE firms are not disadvantaged by emissions trading."

The mechanism should ensure that all of the competitive impacts of the Scheme are addressed. As noted in section 4, the Scheme, and transitional assistance measures provided to EITE's, must be considered in line with international developments and negotiations. Climate change is a global problem requiring a global solution and there appears little benefit in providing only piecemeal support.

While PACIA appreciates the Government's need to balance its EITE objectives with those for the non-assisted sectors, we disagree with many of the recent assertions around burden sharing, namely that every permit given to EITE's places a greater burden on those who don't. PACIA disputes these assertions, and argues that:

- given EITE industries cannot pass on the additional costs, any permit not used to offset the competitive disadvantages confronting the EITE industries in fact shifts the burden towards EITE industries;
- Households, which of course includes workers and shareholders, are not separate from industry, but are in fact the very fabric of EITE's;
- EITE industries will continue to receive the carbon price signal and will therefore continue to seek abatement opportunities;
- If EITE industries close and move offshore (with no environmental gain), a greater burden is shifted to households through a decrease in payments to government coupled with the strong possibility of a requirement for structural adjustment payments.

Two key benefits of the Scheme identified in the White Paper is that it will signal a willingness to take concrete steps towards carbon limitations, and that it will prepare Australia for a low carbon future. PACIA agrees, but sees no reason why providing assistance to EITE's would work against this objective. This is especially true given that we are currently in a transitional period moving towards a global price. If we get the design of the Scheme wrong and industries move offshore, PACIA would argue this would in fact send a negative signal to other countries that an emissions trading scheme could do major economic harm with little or no environmental benefit.

PACIA emphasizes that EITE assistance should:

- account for growth in the EITE industries (both greenfield and brownfield);
- be a temporary offset until such time as a global price is in place, rather than to transition an industry out of the economy; and
- be targeted at firms, not at the broader macro-economic level.

7.2 PACIA Position on transitional assistance

PACIA believes:

- EITE assistance should be provided to all trade exposed businesses. It is unfortunate that a measure of emissions intensity is being used as a proxy for trade exposure.

- EITE assistance should remove the 0%, 60% and 90% thresholds and provide equal assistance to all trade exposed industries to offset the costs of the scheme until such time as international competitors face the same obligations. PACIA believes the appropriate level of transitional assistance should be 90%. The current proposal has vastly differing impacts across the sector where some companies are eligible to receive 90% compensation where others receive nothing, even though either entity is equally trade exposed and does not have the capacity to pass on the costs. This results simply in a given company having to absorb the costs and potentially threatening their ongoing viability.
- The annual 'decay factor' of 1.3% for EITE assistance needs to be removed. Abatement in these sectors should be driven by the price incentive as the scheme cap reduces over time, not by an arbitrary reduction in assistance.
- Should these changes be made, the need for complicated provisions around an "activity" definition could be dispensed with. The activity definition, whereby entities are only being assessed for part of their operations, means that an entity's effective assistance is significantly reduced from either the 90% or 60% assistance.

7.3 Companies not eligible for assistance

PACIA is concerned about the effects of the CPRS on its Small-to-Medium (SME) members that would be ineligible for transitional assistance under the current design. These companies are for the most part plastic fabricators who operate on tight margins and are highly trade exposed. They use relatively large volumes of electricity (between 2-18% of input costs), but have little scope of reducing this consumption, short of purchasing the newest equipment. This section of the PACIA membership is also the large employers of the industry's workforce in absolute terms. PACIA estimates that some two-thirds of the employment reported in the sector can be attributed to those companies who convert raw materials into manufactured goods for use in other sectors in the economy.

This domestic SME base provides the majority of the market for Australian polymer raw material suppliers. Further erosion of their market base would place an additional burden on the upstream sectors of the supply chain.

PACIA is particularly concerned that the emissions trading scheme as currently proposed will see the fragmentation and collapse of Australia's precious integrated domestic supply chain that supports domestically produced products as well as export markets.

The plastics and chemicals industries are special in Australia for the fact that they span the complete supply chain. Australia has the capacity to be a world leader in these industries because it has access to many of the raw materials and an existing refining and manufacturing base. However, in the absence of a specific national strategy for these significant industries, the supply chain needs to be recognised and supported with consistent policy and programs, in order that the industries remain viable and grow.

Of particular importance are the significant world-class collaborative research, development and commercialisation investments committed by organisations such as the Cooperative Research Centre for Polymers. The investments committed by Federal and State governments and a range of leading Australian companies are focused on delivering new materials and products able to deliver solutions for problems of climate, population and economic change. The outcomes are focused on step change improvement in areas including:

- biomedical materials and devices;
- advanced materials;
- sustainable development including photo-voltaic cells and cropping; and
- design and engineering.

The full extent of these public and private investments can only be realised from a local manufacturing sector able to adapt to new opportunities and not penalised by cost increases imposed by the Scheme that cannot be passed on.

Other high-value economies such as Europe, even though they lack domestic raw material supply, have a number of schemes in place to retain their plastics and chemicals manufacturing industries (in the face of threats of Asian development of these industries). They recognise the ubiquitous and integral place plastics and chemicals industries occupy in a strong domestic economy³.

The independent Brain Report identified that:

“Strong supply chains create a collaborative culture between the participating firms, generating productivity improvements, innovation and greater efficiencies. Conversely, without them, the industry is vulnerable to inefficiencies and limited capabilities that lead to increased import penetration.”

The Brain Report specifically highlighted the importance of the supply chain to the strength and flexibility of Australia’s plastics and chemicals industries and their positive contribution to Australia’s future. It recommended that strategic policy imperatives of the Federal Government with respect to the supply chain are three fold:

- the prioritization of supporting infrastructure for the raw materials industry;
- the creation of an environment conducive to, and actively encouraging of, collaboration with all levels of the supply chain, and
- assistance to the industry to form clusters and to develop innovative supply chain systems.

7.3.1 Survey of PACIA SME Members

PACIA undertook a survey of SME companies within its membership. This survey was undertaken because PACIA recognises that the SME sector is pivotal in their contribution to manufacture in Australia.

Generally speaking, the large upstream/refining companies are multinational, and it is the SMEs who are the manufacturers of product to the specifications of clients, and that almost all these companies are Australian owned.

It is important to note that many of the observations and recommendations the Brain Report (i.e. supply chain links and low margins, particularly for SMEs) are echoed by the majority of the respondents.

Key findings:

- Respondent companies manufactured products that range from plastic boxes and films for food transport to plastic bags, beverage and medical containers, water tanks and stormwater pits, to stationery products.
- Most have offices and production facilities employing people in more than one state in Australia
- Most obtained their resins and refined materials from Australia, some supplementing with some international components.
- 60% stated they faced strong competition from international imports. All stated these competitors were located in Asia.
- Electricity use ranged from 2 – 18% of operating costs.
- Most stated they would lose customers and damage profitability (ranging from 5-10% of EBITDA), based on a projected cost of \$20 per tonne of CO2 equivalent.

³ Cefic Study 'Horizon 2015: Perspectives for the European Chemical Industry

- About 50% of respondents said they might end up going out of business if imports were not similarly reflecting a cost for carbon. A number welcomed the moves to increased environmental sustainability, however, called for the Scheme to have a soft start (either through a capped low carbon price or gentle reduction trajectory) or find mechanisms whereby equivalent costs were imposed on imports.
- As to passing on the increased cost of energy to customers, some respondents stated that 'they would lose business immediately', others said their 'customers would not tolerate a price increase and so the company would have to try to absorb this increase rather than lose customers, therefore affecting the company's viability'.

The plastics and chemicals sector has worked deliberately over the past few years and shown leadership in assessing where change is likely to occur and the extent of impacts. An example of this is PACIA's Sustainability Leadership Framework, designed to assist members develop sustainability strategies for action in:

- workplace operations;
- markets and supply chains;
- transformation in materials;
- resource use;
- technologies; and
- collaboration and partnerships.

Further information on the Sustainability Leadership Framework is at [Attachment 3](#).

The Commonwealth Government has the potential to assist or hinder the plastics and chemicals industries' place at the forefront of the creation of an efficient and environmentally sustainable economy in Australia. PACIA is committed to transitioning the plastics and chemicals industries to a green, smart future and looks forward to a Scheme that enables this adjustment without damaging Australia's plastics and chemicals supply chain.

7.3.2 Climate Change Action Fund

Although PACIA's strong preference is for all trade exposed industries to be eligible for transitional assistance, we welcome the establishment of the proposed Climate Change Action Fund (CCAF) to facilitate the transition of business to a low carbon economy. One of the key attributes of the CCAF will be its niche incentive position with respect to other programs in the move to a low carbon economy. PACIA agrees with the three relevant current specifications for the CCAF, namely:

- Addressing information gaps for business and community organisations
- Investment in energy efficiency and low emissions technologies
- Structural adjustment provisions for workers and communities.

PACIA understands that the CCAF is primarily targeted at those companies and industries that are ineligible for other assistance measures within the Scheme. Government will need to determine eligibility criteria for the program based around the clearly stated objectives of the scheme.

8. Feedstock Issues

The plastics and chemicals sector globally uses approximately 4% of the world's oil and equivalents for use as feedstock to product. The embedded carbon content of these fuels is effectively sequestered for life in these products and is not combusted. Any response to climate change, particularly where the pricing of carbon is concerned, must recognise the potential cost impact should a price be set further upstream and passed to customers. Industry estimates suggest that a carbon price of \$35/tonne of CO₂ would have a bigger cost effect on some companies (by some four to five times) via feedstock than would a potential doubling of the wholesale electricity price.

Companies in the sector use a number of different liquids and gases (which are otherwise considered as combustible fuels) as feedstock, including propane, ethane, methane, LPG, and naphtha. It is important to note that the amount of these purchased fuels used for feedstock versus use for combustion varies across operations. For some companies, the figure may be 80% feedstock/20% energy, while for others the figure may be 60/40 respectively.

8.1 Obligation Transfer Number

PACIA welcomes the recognition of the feedstock issue in the White Paper through the establishment of the Obligation Transfer Number (OTN) mechanism. The mechanism allows companies who do not combust hydrocarbons but rather sequester them in product to purchase the fuel without the upstream liability attached, that is, carbon price free. It also allows for significant emitters to account for their own emissions.

PACIA identified a number of key amendments to the legislation in its submission to the Senate Economics Committee Inquiry into the Draft CPRS Bills.

9. Complementary Measures

PACIA understands that more than 140 policies linked to climate change are in place across all levels of government. The Association has strongly advocated for nationally coordinated policies and regulations, and was therefore pleased to see the outcomes from COAG in November 2008. Unfortunately, programs have continued to be proposed since that time, which are not in keeping with the intent of the COAG agreement. We therefore strongly recommend a moratorium on new measures be put in place.

10. Other design issues

PACIA is a member of the Australian Industry Greenhouse Network (AIGN). We support the positions put forward in the AIGN Submission to this Inquiry.

11. Attachment 1

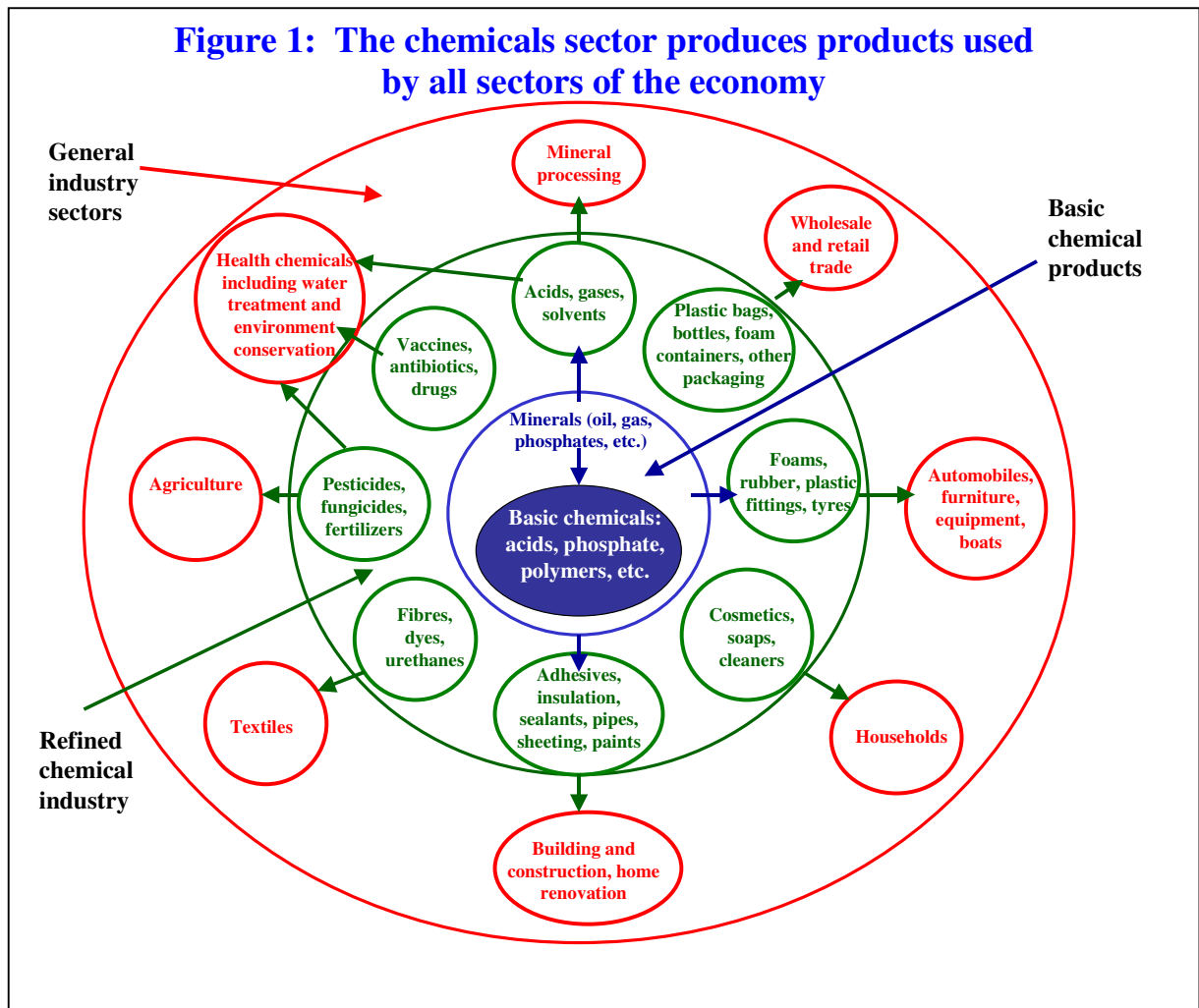
Australian Chemicals and Plastics Industries Subsectors, industries and products framework of Australian Chemicals

Sub-sectors	Industries	Principle products	Production and product characteristics
Basic chemicals sub-sector	Fertilizer manufacturing	Ammonia (fertilizer), ammonium nitrate, ammonium phosphate, superphosphate, urea, fertilizers (fishmeal, potash, etc.).	<ul style="list-style-type: none"> • Capital intensive – relatively large scale enterprises. • High volume – importance of economies of scale for competitiveness. • Low degree of product differentiation – many products, commodities. • High barriers to entry.
	Industrial gas manufacturing	Acetylene gas, carbon dioxide, carbon monoxide, hydrogen, nitrogen, oxygen.	
	Synthetic resin	Plastic raw materials, polyethylene, polypropylene, polystyrene, polyvinyl chloride, synthetic rubber, etc.	
	Organic industrial chemicals	Organic acids, dye base, phenol, pigment, styrene, urea (high grade), vinyl chloride.	
	Inorganic industrial chemical manufacturing	Chlorine, fluoride, acids (nitric, hydrochloric, phosphoric, sulphuric), sodium (bicarbonate, carbonate, hydroxide), zinc oxide.	
Knowledge products sub-sector	Medicinal and pharmaceutical products	Antibacterial products, antibiotic products, medical gas, ointments, toxins, vaccines, vitamins.	<ul style="list-style-type: none"> • Very high degree of differentiation between products. • Products focused on delivering specific outcomes for humans, animals, plants, etc. • Sustained innovation necessary for continued competitiveness. • High levels of R&D and marketing expenditures
	Cosmetics and toiletry products	Face, hand or skin lotions or creams, deodorants, hair shampoos and conditioners, nail polish, sunscreen, perfume, lipstick.	
	Soap and other detergents	Detergents, soaps, disinfectants, laundry bleach, toothpaste, washing powders or liquids.	
	Pesticide manufacturing	Dip, fly spray, fungicide, insecticides, insect repellants, animal poisons, weed killer.	
Specialty products sub-sector	Explosives	Dynamite, blasting powder, fuses.	<ul style="list-style-type: none"> • High degree of product differentiation. • Flexible manufacturing techniques can be employed for economic, relatively low production runs. • Medium levels of R&D and marketing expenditures.
	Paints	Paint, putty, stains, primers, fillers.	
	Rubber product manufacturing	Boots, erasers, gloves, hoses, mattresses, sheeting, sponges, washers, water bottles.	
	Rubber tyres	Motor vehicle tyres, tubes, retreads.	
	Plastic blow moulded products	Bottles.	
	Plastic extruded products	Hoses, pipes.	
	Plastic bags and film manufacture	Bags, food wrapping, film, garbage bags.	
	Plastic product, rigid fibre reinforced products	Automotive components, rigid plastic sheets, swimming pools, water tanks.	
	Plastic foam products	Fast food containers, foam padding.	
	Plastic injection moulded products	Buckets, garbage bins, plastic kitchenware, floor coverings.	
	Ink products	Writing, drawing or printing ink.	
Other chemical products	Antifreeze, adhesives, glues, dry cleaning components, removers (rust, stain, fat), surface cleaners.		

Source: Brain Report, 2006

Strategic Value of the Chemicals and Plastics Industry

Figure 1: The chemicals sector produces products used by all sectors of the economy



Source: Brain Report, 2006

12. Attachment 2

The Strategic Importance of the Chemicals and Plastics Industries

The plastics and chemicals industries, their supply chain relationships, R&D and skilled workforce are central to Australia's current high income economy and in particular, to attaining an environmentally sustainable future.

In 2006, the Victorian Government's Department of Innovation, Industry and Regional Development together with PACIA and ACCORD commissioned Prof Brain and the National Institute of Economic and Industry Research to analyse the current contribution and future challenges and opportunities for the plastics and chemicals industries. It should be noted that this Report was produced before the current Emissions Trading Scheme and suite of transition measures were proposed. Nevertheless, the resulting '*Report on the Economic and Social Contribution of the Plastics and chemical Industries to Victoria and Australia*' (The Brain Report) produced a number of Strategic Imperatives that are invaluable to the Commonwealth Government in its consideration of how to configure our transition to an environmentally sustainable, viable economy. Pertinent findings are included below. Also included here are some observations on current and future trends toward sustainable plastics and chemicals to an environmentally sustainable future.

The independent Brain Report found in Victoria alone that 'given the scale of [existing] chemical production, the chemicals sector is one of the most important drivers of Victorian economic activity'. Indeed,

"in 2004 the chemicals sector was directly or indirectly responsible for 7.3 per cent of total Victorian economic activity, as measured by gross State product, and directly or indirectly created 124,000 Victorian employment positions."

The level of economic activity increases to '9.1 per cent when account is taken of the productivity enhancing/cost saving benefits the chemicals sector generates for other sectors in the Victorian economy'.

In other words, Victoria's domestic chemicals sector is not only an important sector in its own right, it has a multiplier effect in productivity and cost saving benefits to the broader economy that would be foregone if sections of the chemicals sector moved off shore.

Care needs to be taken in devising a transition path to a sustainable future that supports the retention and growth of the plastics and chemicals industries. The Brain Report ranks the chemicals industry's strategic value as follows:

- Equal to the motor vehicles industry
- 1.5 times the contribution of the tourism industry
- 3 times the contribution of the mining industry
- Slightly less than the contribution of the food industry.

The independent Brain Report emphatically states:

Recognition by policy makers and external stakeholders of the chemical sector's economic and social contribution is crucial to future industry policy. In many ways the relationships that exist between the chemical sector and broader manufacturing exemplify the importance of ensuring a critical mass. There is little doubt that without a healthy local chemical sector, Australian manufacturing would suffer significant losses in research and development contribution and innovation capabilities and enablers; two essential ingredients to future sustainability of manufacturing.

Contributions by the plastics and chemicals industries to environmentally sustainable industries in Australia and overseas

The remarkable advances in the science of plastics and chemicals, their versatility, availability, and cost-effectiveness means they are becoming substitutes for other more expensive and scarce materials. They are already an intrinsic part of our daily lives. The flexibility and strength of plastics mean they can be formed and reformed, with multiple uses and multiple lives. They can be bonded and combined with natural materials such as cloth, paper and metals and completely synthetically produced.

Plastics and chemicals were the defining marker for the 20th century and present the biggest lever for a sustainable 21st century.

As such, plastics and chemicals have a key role to play in finding sustainable solutions to many of the world's challenges, including climate change. Some areas are outlined below.

1. Energy shortages: plastics and chemicals can help alleviate the looming energy crisis in these ways:
 - improving the energy efficiency of buildings i.e. insulation, lighter materials, composites in construction and fittings
 - contributing to the efficiency of renewable energy sources i.e. materials in the manufacture of wind turbines, solar panels and installation equipment, piping for geothermal systems, fuel cells and hydrogen production and storage
 - contributing to digital communications, enabling miniaturization and portability
 - products at end-of-life unable to be mechanically recycled have significant residual energy and are able to be diverted from current landfills and contribute energy generation opportunities.

At a global level, in 2008, BASF published a carbon balance study. This contrasts the CO₂ emission-savings that are achieved with their products and procedures with the emissions from raw material extraction, production and product disposal. The results, that have been confirmed by the Öko-Institut in Freiburg (Germany) show that BASF products can save three times more greenhouse gas emissions than the entire amount caused by the production and disposal of all these products (*Source: Factor 3: BASF's climate Balance, website: www.corporate.basf.com*)

2. Food production and storage: plastics and chemicals can help in these ways:
 - Plastics account for only 16% of packaging by weight and protect over 50% of consumer goods (PACIA)
 - Extending the shelf-life of goods and other perishables, contributing to net savings of product, materials and resources
 - Green, bio-packaging for the growing, storage and transport of food and products from greenhouses to aquaculture
 - Crop protection products can sustain agriculture in drought conditions and support low tilling practices
 - Transport and treatment of water that is consistent quality and fit for purpose.
3. Materials shortages: plastics and chemicals can help in these ways:
 - Australia has reasonable levels of plastics and chemicals recycling and this is increasing, meaning products have more than one life
 - Durability and recyclability – some plastics and chemicals are inert, meaning they endure and can be recycled many times. A 2001 independent study by the RMIT Centre for Design reported an 80% saving for making a Kg of plastic packaging from recycled feedstock compared with virgin sources. (*Source: Stage 2 report for Life Cycle Assessment for Paper and Packaging Waste Management Scenarios in Victoria, January 2001*)
 - Degradability - others biodegrade, meaning they compost or dissolve

- In some cases the next available material to plastics can consume more energy and resources to manufacture

A recent, independent study commissioned by Plastics Europe, the pan-European Association, found that the total life-cycle energy needed to produce, use and recover plastic products in Western Europe is 3.900 Mill GJ/a and the total life-cycle GHG emissions are 172 Mt/a. Furthermore the results show that substitution of plastic products up to a maximum would need 600 - 1.400 Mill GJ/a more energy (or about 26% more energy) than needed in the total life-cycle of all plastic products today. In the same way, substitution of plastic products up to a maximum would cause 58 - 135 Mt or about 56% more GHG emissions than the total life-cycle of all plastic products today. (Source: *Plastics Europe: GUA – the Contribution of Plastic Products to Resource Efficiency*)

4. Technical advancement: plastics and chemicals can help in these ways:
 - Nanotechnology opens up possibilities in composite materials for medical treatments such as heart devices and self-healing polymers, in domestic goods, telecommunications, smart clothing and paints etc.
 - Sustainable cleaning and hygiene products contribute to reduced energy and water consumption, water reuse.
 - A local manufacture capability is the technology and knowledge cornerstone for managing the materials and products at end-of-life.

13. Attachment 3

PACIA's Sustainability Leadership Framework

In June 2008 PACIA's Sustainability Leadership Framework was jointly launched by the Federal Minister for the Environment, Heritage and the Arts and the Victorian Minister for the Environment Jennings. The PACIA Board has committed to integrating sustainability into core business and using the strategies and actions outlined in the Framework to create value for all members. The goal of the Framework is to position the sector to respond, adapt and transform for climate change impacts, skill shortages, changing feed stocks and emerging technologies.

The Framework provides a platform not only for members to take action, but for PACIA to deliver its programs, services and support to the industry. The Framework describes a vision for the industry and the role of Australian chemicals and plastics companies in a sustainable society.

PACIA already has some 27 signatory companies to the Framework.

PACIA's sustainability programs and services

PACIA seeks to be a leader amongst Australian industry associations for its integration of sustainability into its programs and its sophisticated approach to policy, programs and strategy.

PACIA has been delivering sustainability programs for members for over a decade, starting in plastics recycling, and these have grown in range and impact in response to the needs of our members. Together with our policy and regulatory advisory work, these programs form a comprehensive, informed program for the benefit of members and to inform decision making by government.

Select relevant programs are briefly listed below:

- REWARDS – funding support for feasibility analysis for efficiency in energy, water and materials for sites and supply chains – in partnership with Vic EPA
- Liquid Futures – funding support for water audits and water efficiency projects for sites – in partnership with Vic EPA and DSE
- Design for Sustainability – a national innovative communications program for the packaging, furniture and building industries advocating and providing facts on smarter design for sustainability – funded in partnership with Sustainability Victoria
- Packaging Covenant and recycling programs for diverse types of plastics
- Training:
 - Sustainability Integration 101 for Managers
 - Energy Management in Practice
 - Water Management in Practice
 - Business Value of a Life Cycle Approach
- Sustainability Leadership Framework signatories – special events and communications

In addition PACIA holds regular state network forums for members enabling presentations by experts in government and industry on key policy, regulatory, program changes and opportunities and outstanding sustainability actions. A key focus over the last twelve months has been the impact of climate change (such as water shortages) and the Federal Government's CPRS.