



SUBMISSION BY THE
Housing Industry Association

to the
Department of Climate Change
on the
Carbon Pollution Reduction Scheme Green Paper

10 September 2008

CONTENTS

| | | |
|----------|---|-----------|
| 1 | INTRODUCTION..... | 3 |
| 1.1 | HOUSING SECTOR EMISSIONS..... | 3 |
| 1.2 | CURRENT STATE OF HOUSING AFFORDABILITY..... | 4 |
| 2 | IMPACT OF EMISSIONS TRADING ON THE BUILDING MATERIALS SECTOR..... | 5 |
| 2.1 | THE ROLE OF THE AUSTRALIAN BUILDING PRODUCTS SECTOR..... | 5 |
| 2.2 | PRESERVING AN AUSTRALIAN BUILDING MATERIALS SECTOR..... | 8 |
| 2.3 | AN EQUITABLE APPROACH TO EMISSION INTENSIVE TRADE EXPOSED INDUSTRIES..... | 9 |
| 3 | THE IMPACT OF EMISSIONS TRADING ON THE HOUSING SECTOR..... | 11 |
| 3.1 | ADDITIONAL IMPOSTS..... | 12 |
| 4 | IMPACT ON HOUSING AFFORDABILITY..... | 13 |
| 4.1 | DISADVANTAGE FACED BY HIGHLY EFFICIENT HOUSING..... | 13 |
| 5 | COMPLEMENTARY MEASURES..... | 15 |
| 5.1 | BUILDING STANDARDS..... | 15 |
| 5.2 | APPLIANCE STANDARDS..... | 15 |
| 5.3 | REBATES & INCENTIVES..... | 16 |
| 6 | OFFSETTING THE IMPACT ON NEW HOUSING..... | 17 |

HIA ::
Kristin Tomkins
Executive Director, Building Policy
Alternative contact:
Ben Phillips
Assistant Director, Industry Policy

Housing Industry Association
79 Constitution Avenue
Campbell ACT 2612
Phone: 02 6245 1300
Email: k.tomkins@hia.com.au



Building Materials and New Housing – Carbon Pollution Reduction Scheme

1 Introduction

The Housing Industry Association (HIA) welcomes the opportunity to comment on the Green Paper – Carbon Pollution Reduction Scheme (CPRS).

It is essential that the implementation of the CPRS is equitable throughout the Australian economy. HIA is concerned that without further adaptation there is a likelihood that the CPRS will pose a significant impost on both Australian building products and the cost of new housing.

HIA believes that the CPRS needs to be modest in its introduction especially in regard to the caps on permit costs, the definitions of ‘emissions-intensive trade-exposed industries’ and the trajectories for future reductions.

HIA is concerned that the Green Paper does not provide a detailed consideration of the flow-on effects for building products from those companies that will be directly affected by the CPRS in terms of their product price and the impact that this will have on investment in the Australian building product manufacturing sector.

Furthermore, there appears little doubt that the cost of new housing will be both directly and indirectly affected by the introduction of the CPRS and the Government’s overall response to climate change.

Given the additional cost imposed on new housing and the likely consequence for housing affordability, HIA believes that the Federal Government needs to consider additional incentives to offset cost of CPRS on new housing. New housing already faces a significant cost disadvantage when compared to existing housing despite the significant environmental efficiency gains delivered by new housing no financial incentive payment or assistance is provided.

The impact of this disparity provides a direct incentive for consumers to purchase less efficient existing houses, whether for investment or owner occupation.

1.1 Housing sector emissions

The housing industry recognises the need to build environmentally responsible housing in all its forms.

On an annual basis, the housing sector adds less than two per cent to the current building stock in Australia. The housing industry, both new and renovation sectors, contributes around 10 per cent of Australian emissions from the construction process¹. This compares with the residential sector’s operational emissions which contribute 18 per cent of Australian emissions. The main use of energy in the residential sector can be attributed to heating water, space heating and cooling, refrigeration, appliance and equipment, lighting and cooking.²

¹ Based on 240 tonnes of emissions per new dwelling and the renovations sector having similar aggregate emissions net of infrastructure emissions.

² National Framework for Energy Efficiency Stage Two Consultation Paper, 2007, page 6.



Estimates of the amount of CO₂ as embodied energy used in the production of new residential dwellings and associated infrastructure requirements are in the vicinity of 240 tonnes³.

The CPRS is focused on the construction emissions and embodied energy within building materials. This will be addressed through the application of these emissions at the point of manufacture. However it is important not to overlook that whilst the embodied energy in building materials is important, when considered over the life cycle of a home, it becomes less significant than the ongoing operational energy use.

To achieve real and sustainable reductions in greenhouse gas emissions further education and investment needs to be directed at Australia's existing housing stock.

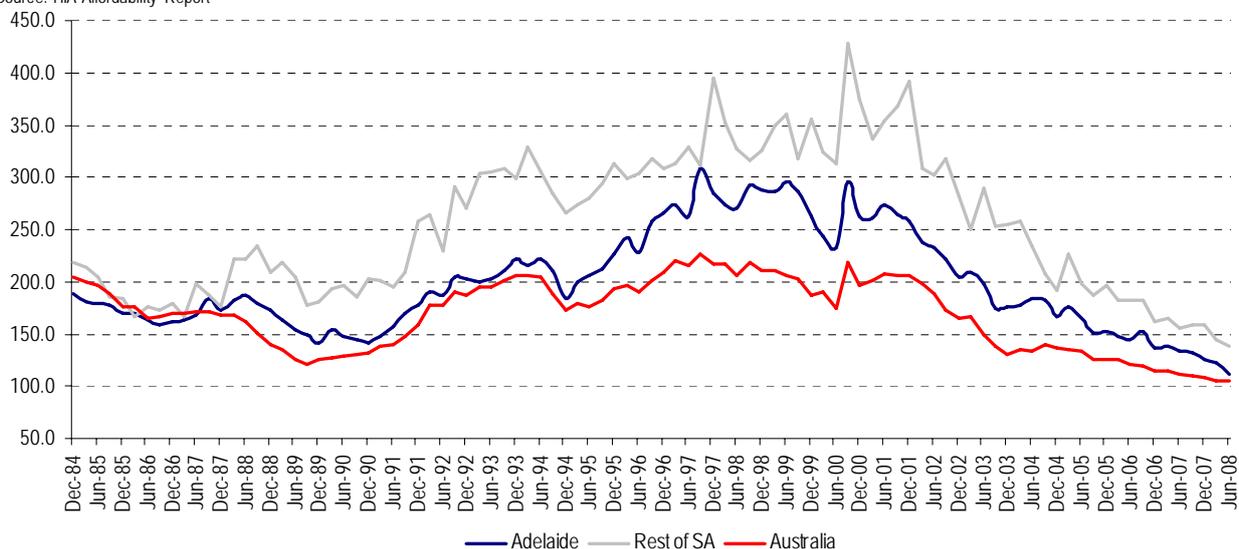
1.2 Current state of housing affordability

The HIA-CBA First Home Buyer Affordability Index has been impacted heavily by high interest rates and property prices. The most recent numbers show that housing affordability is now at its lowest point since the establishment of the Index.

Housing affordability is an issue in every state and territory and most regions throughout the country. The chart below shows clearly that housing affordability has deteriorated savagely for both capital city and regional areas across the nation. Falls in the sales of new homes given growing demand a consequence of population growth means further 'price churn;' within existing housing stock and thus a further decline in housing affordability.

Figure 1
Housing Affordability in South Australia

Source: HIA Affordability Report



³ Based on yourhome.gov.au estimates of construction energy use and embodied emissions factor for residential buildings carbonneutral.com.au



2 Impact of emissions trading on the building materials sector

The housing sector is reliant on the efficient supply at a reasonable price of a range of building materials and products. The Australian building products sector is diverse, innovative and contributes \$41 billion⁴ to the Australian economy, supporting 390,000 jobs across the manufacturing industry and many more jobs in related industries.

These products can be grouped into two categories: natural building materials and composite building products.

The table below sets out the proportion and types of building materials that are used in housing construction. The 'weighting' relates to the cost component of home building materials.

Table 1: Materials used in housing

Source: ABS, cat no. 6427.0 - Producer Price Indexes, Australia, Jun 2008

| Group | Weighting |
|---|-----------|
| Concrete, cement and sand | 6.4% |
| Cement products | 2.4% |
| Ceramic products | 12.4% |
| Timber, board and joinery | 27.1% |
| Steel products | 4.8% |
| Other metal products | 18.4% |
| Plumbing products | 6.5% |
| Electrical equipment | 3.0% |
| Installed gas and electrical appliances | 1.7% |
| Other materials | 17.1% |

Clearly, almost all of the building material and products used in the construction of new housing will be affected by the CPRS in some way. It is also evident that the majority of building materials and products appear unlikely to be classified as EITE industries and therefore will need to fully incorporate the cost of the CPRS into their product price. These industries will not be able to absorb the cost of the CPRS, particularly in the first years of operation, and should not be expected to absorb the full cost of achieving a national and global benefit. Hence there will be a direct impact from the CPRS on the price of building materials.

2.1 The role of the Australian building products sector

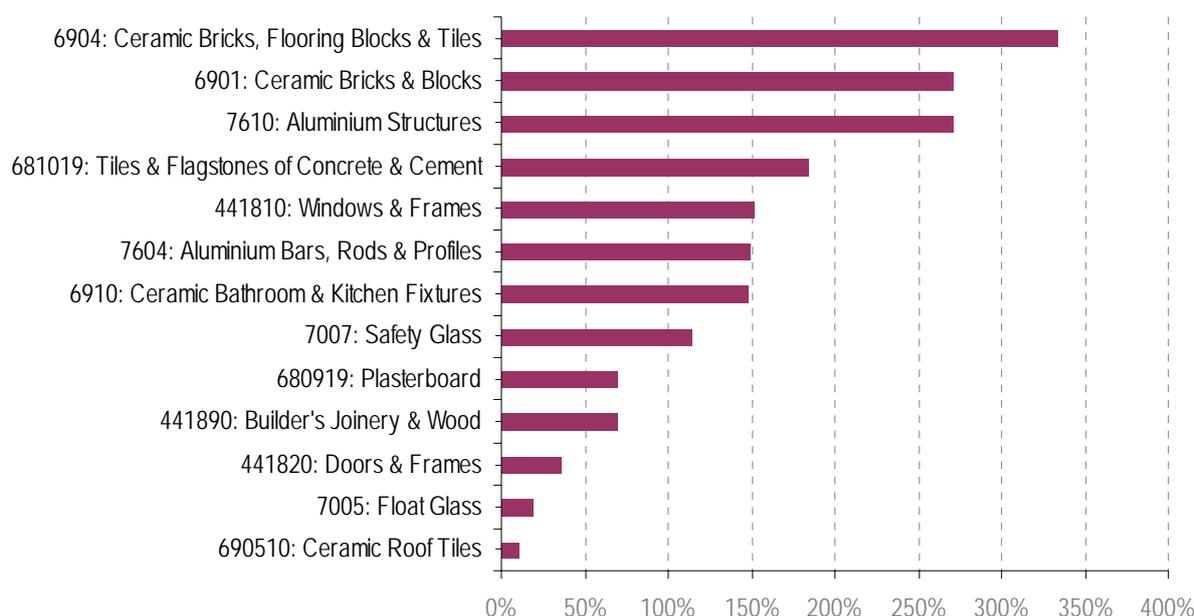
The abundance of locally available natural building materials allows Australia to manufacture building products which are recognised as the best in the world. The manufacturing processes of Australian companies are also world's best practice in many areas, allowing the Australian building materials sector to compete in the global market generating valuable export income. This strength has also been important over past years in minimising the impact of importation on locally manufactured building products.

In terms of building material imports, the greatest growth from 2002 to 2006 has been in ceramic bricks, flooring blocks and tiles, ceramic bricks and blocks, and aluminum structures.

⁴ Manufacturing contribution to residential and non-residential building products, based on ABS input-output tables, Labour force detailed quarterly tables and HIA calculations.

Figure 2: Growth in Value of Select Building Material Imports, 2002-2006

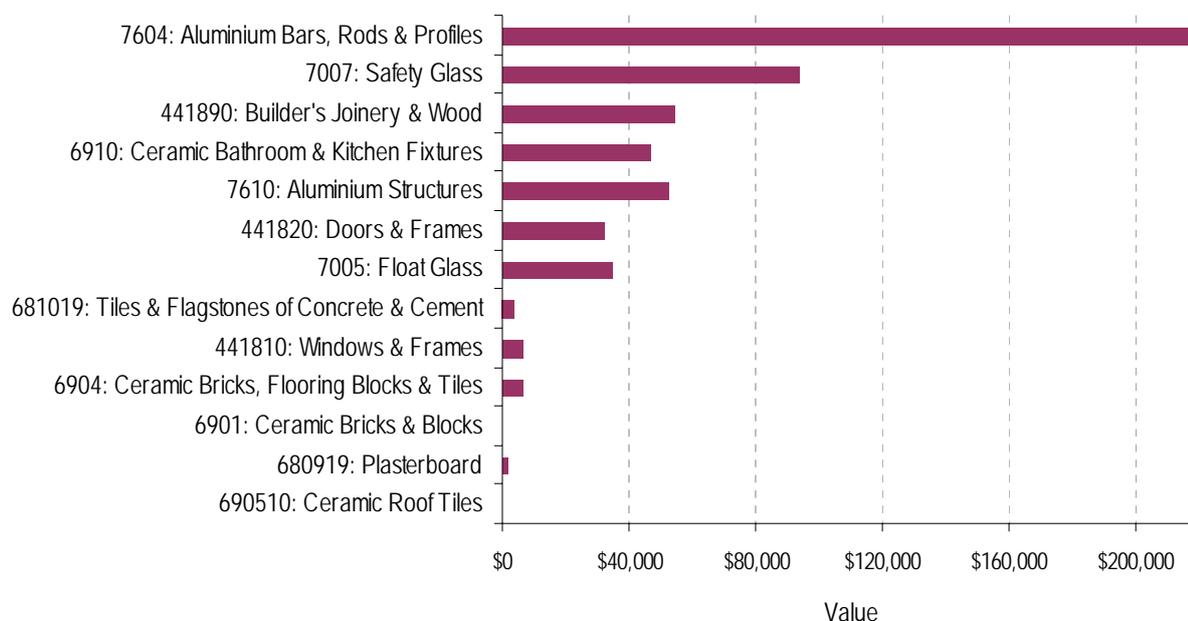
Source: UN Comtrade Database 2007



The top 5 Australian imports of selected building materials in 2006, by value, were aluminum bars, rods and profiles, safety glass, builder's joinery and wood, ceramic bathroom and kitchen fixtures, and aluminum structures.

Figure 3: Building Material Imports By Specific Category - '000

Source: UN Comtrade Database 2007



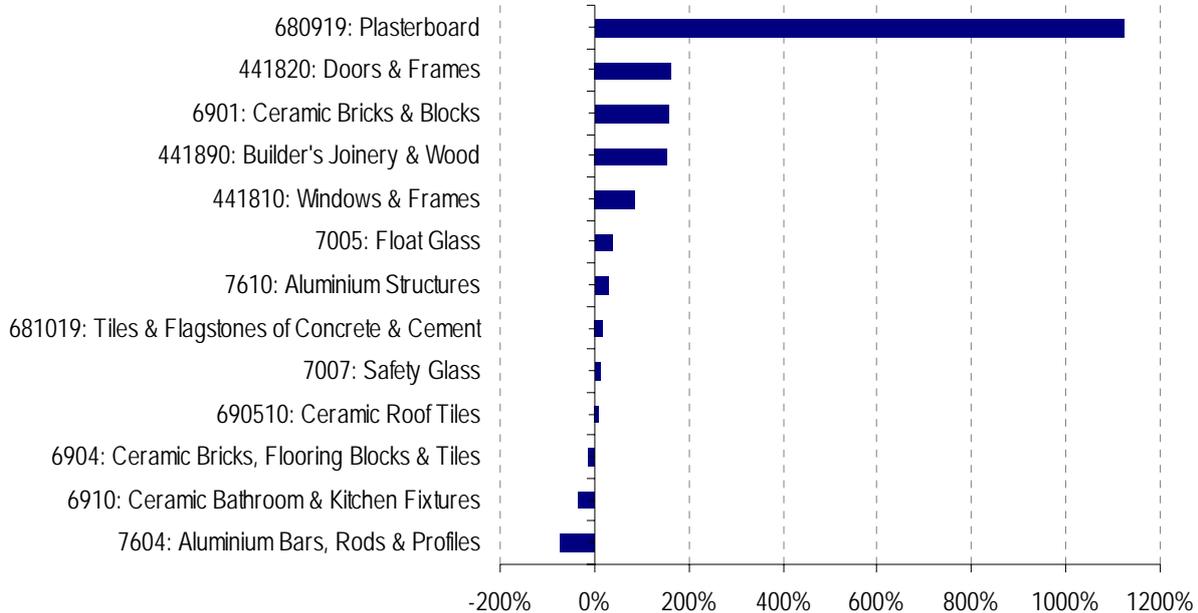
A comparison of Australia's export of building materials in 2002 and 2006 reveals the greatest growth by value in selected building materials has been in plasterboard, doors and frames, and ceramic bricks and blocks and tiles. There was a decrease in the exports



of ceramic building bricks, flooring blocks and tiles, bricks, blocks and ceramic goods of siliceous earth and aluminum bars, rods & profiles.

Figure 4: Growth in Value of Select Building Material Exports, 2002-2006

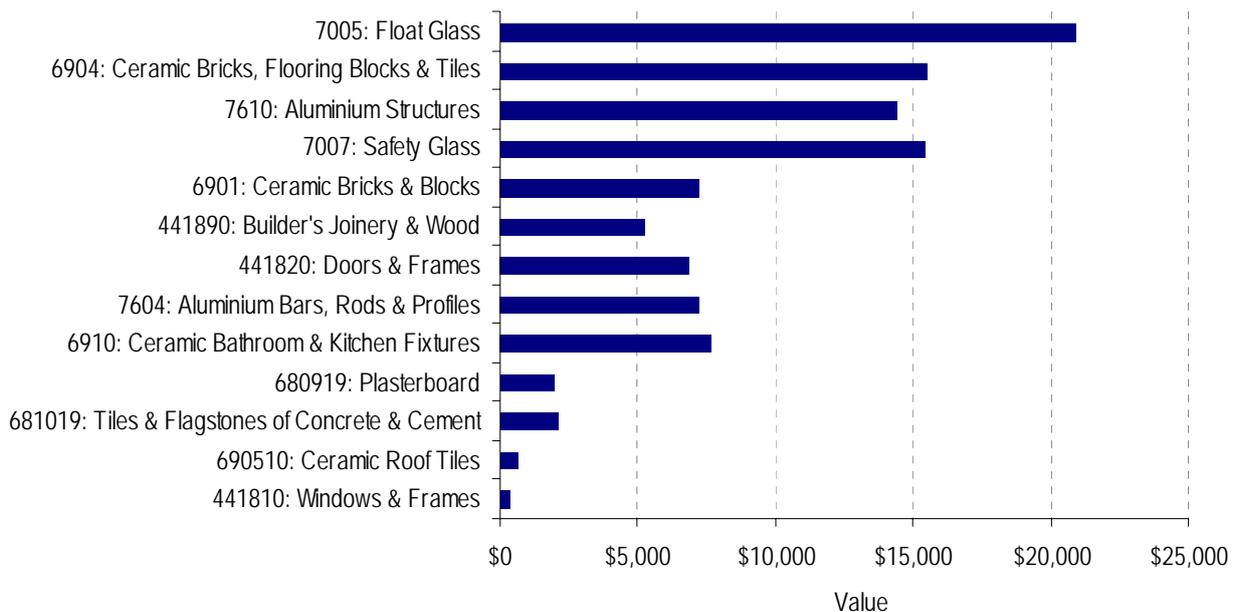
Source: UN Comtrade Database 2007



A comparison of selected building materials reveals that Australia's greatest exports, by value, in 2006 were float glass, ceramic bricks, flooring blocks and tiles, aluminum structures, safety glass, and bricks, blocks and ceramic goods of siliceous earth.

Figure 5: Building Material Exports By Specific Category - '000

Source: UN Comtrade Database 2007





The largest importer of selected Australian manufactured building materials in 2006, by value was New Zealand, which imported over \$48.2 million worth of building materials. The second largest importer was Japan, at \$12.2 million, followed by China, \$9.9 million, Malaysia, \$4.2 million and Indonesia, \$3.5 million.

Table 2: Top 5 Destinations for Select Australian Manufactured Building Materials

Source: UN Comtrade Database, 2007

| Country | Value |
|-----------------------------|---------|
| 1. New Zealand | \$48.2m |
| 2. Japan | \$12.2m |
| 3. China | \$9.9m |
| 4. United States of America | \$4.2m |
| 5. Germany | \$3.5m |

China is the largest exporter of selected building materials to Australia. In 2006 Australia imported \$286.3 million in Chinese manufactured building materials. The second largest exporter of building materials to Australia was New Zealand, at \$46.7 million, followed by Indonesia, at \$42.3 million, Malaysia, at \$42.3 million and the United States of America at \$28.1 million.

Table 3: Top 5 Countries of Origin for Select Building Material Imports

Source: UN Comtrade Database, 2007

| Country | Value |
|-----------------------------|----------|
| 1. China | \$286.3m |
| 2. New Zealand | \$46.7m |
| 3. Indonesia | \$42.3m |
| 4. Malaysia | \$42.3m |
| 5. United States of America | \$28.1m |

New Zealand, China and Malaysia feature in the top 5 trading partners for both imports and exports of selected building materials. Of which both China and Malaysia have no current intention to introduce an emissions trading framework, along with Indonesia and the United States.

2.2 Preserving an Australian building materials sector

The location of manufacturing is a fundamental aspect of determining the life cycle impacts of building materials. In terms of global emissions, the local manufacture of building materials and products should be seen as a way to reduce the transport based emissions that come from importation of building products. Therefore until a global emissions trading scheme is in place, it is essential that the Government endeavor to retain an Australian manufacturing sector for building materials.

All of the companies affected by the CPRS currently operate Australian manufacturing plant. Some of the major examples include Bluescope's Port Kembla steelworks, Brickworks and Boral's brick kilns on the east and west coast, Boral's cement plants across Australia and Viridian's new glass manufacturing plant in Melbourne.

These companies all make decisions from time to time to invest in new manufacturing plant, whether to replace old plant being phased out of operation, or to deliver product to new and growing markets. These decisions can take a minimum of five years from inception to operation of the new plant.



The CPRS will affect these decisions in the future, as these companies make decisions on whether to investment in replacement and new manufacturing plants in Australia. Ultimately, companies will move overseas if it is faster and more cost effective to establish a new plant offshore and import the product back to Australia. If the new plant will also not be affected by an emissions trading scheme in the overseas location, this will be a significant part of that companies deliberations.

There appears to be an assumption by Government that once a global emissions framework is in place, of which there is no clear target at this time, the local production and transport benefits will outweigh the choice of companies to establish operations overseas. However, this fails to recognise that a company will not close down a viable operation overseas once the investment has been made, simply to return to Australia. Even where these companies may have 'mothballed' plant, it is highly unlikely that these operations could be brought back online in a cost effective manner. Hence the investment and the emission will remain overseas.

On this basis, HIA is extremely concerned with the CPRS and its impact on the viability and longevity of the Australian building materials manufacturing sector.

2.3 An equitable approach to Emission Intensive Trade Exposed industries

The Green Paper states that *"...the rationale for EITE assistance is to provide assistance to those industries that face the greatest material impact of the carbon cost and that are constrained in their ability to pass through these costs because of international competition."*⁵

The classification and treatment of EITE industries is a significant aspect of the CPRS. As noted in the Green Paper, mishandling this issue will lead to carbon leakage. But more importantly, it is this aspect of the CPRS that could undermine the Australian building products industry to such an extent that importation of building products becomes the only viable option, whether from Australian companies or international companies.

Based on 2001 emissions figures⁶, it appears likely that the steel, aluminum and cement industries will be classified as EITE industries over 2,000 tonnes CO₂/\$M revenue and be eligible for 90 per cent of permits free.

Other building materials, such as bricks, concrete and terracotta roof tiles and pavers, and possibly glass, may be classified as EITE industries over the 1,500 tonnes CO₂/\$M and be eligible for 60 per cent of permits free.

HIA is concerned that the proposed thresholds are based on past emissions data which has been collected based on the old rules of reporting greenhouse emissions. The newly introduced National Greenhouse Energy Reporting Scheme (NGERS) has shifted the responsibility for reporting indirect emissions away from the manufacturer to the energy provider. This will mean that the 2008 NGERS reports will show a significant reduction in emissions from the manufacturing sector. Therefore, HIA believes that the EITE thresholds should be reviewed downwards, based on this adjustment.

⁵ CPRS Green Paper, pg 295

⁶ Carbon Pollution Reduction Scheme Green Paper, July 2008 Figure 9.2, pg 313



The Green Paper acknowledges that the treatment of EITE industries could be detrimental to the overall permit price for industries who do not receive a concession, hence unfairly increasing the cost of those products. In relation to building materials for housing, HIA believes that this is one of the key factors that must be addressed prior to a decision on thresholds.

HIA is also concerned that the EITE is focused primarily on the impact to companies who will be exporting their products to countries where an emissions trading framework is not in place. HIA believes that it is essential for the Government to more closely consider the impact of importation of building products from countries without an emissions trading framework, on companies who remain producing building materials in Australia.

The viability of an Australian building products sector should not be sacrificed to imported building products.

Therefore HIA prefers the alternative model for EITE industries, whereby a maximum threshold is established, with all industries required to purchase permits for their emissions below that threshold, regardless of their trade exposure. Support is then provided for those companies whose emissions exceed the threshold, based on trade exposure.

3 The impact of emissions trading on the housing sector

The CPRS will focus on the generation of greenhouse emissions from energy supply and major industries which make up the primary generators of Australian emissions. For the building materials sector, this means that the CPRS will capture the cost of the embodied energy (construction emissions) in these products, along with an increased energy supply cost to the manufacturer and some additional costs associated with future increases in transport costs.

As stated, almost every building material used in new home construction will be affected by the CPRS to some degree. Therefore, the building materials sector will need to pass on the cost impacts of the CPRS on their production, along with the additional cost increases from the CPRS applying to both transport and energy supply. It is unrealistic to assume that these increased manufacturing costs will not be passed onto the consumer through increased costs in building materials.

Many building products have been faced with increased costs over the last few years, due to factors including higher oil prices and increasing demand from countries, such as China and India. This experience clearly shows that companies have not been able to simply absorb external price influences and must pass these onto the customer as a price increase. ABS figures show that there has been an increase in the cost of almost every major building product over the last 12 months. The introduction of the CPRS as an additional cost on production, will affect building materials prices further.

Table 4: Proportion of building materials by cost in new housing

Source: ABS Producer Price Index, cat no. 6427.0, June 2008

| All groups | 12 month inflation |
|---|--------------------|
| Concrete, cement and sand | 4.6% |
| Cement products | 3.0% |
| Ceramic products | 4.1% |
| Timber, board and joinery | 6.5% |
| Steel products | 11.4% |
| Other metal products | 4.2% |
| Plumbing products | 4.1% |
| Electrical equipment | -0.6% |
| Installed gas and electrical appliances | 2.3% |
| Other materials | 2.0% |

The Green Paper states that *“In many cases, entitles and industries will be able to pass on most of the additional costs resulting from the scheme, and those costs will be reflected in the final price of finished products. The demand for particular goods may then change, depending on how consumers react to the change in prices.”*⁷

⁷ Carbon Pollution Reduction Scheme Green Paper, pg 292



The above comment overlooks the fact that the end user of the higher cost products, such as those used in housing, will have a disproportionate expense in meeting the cost of the CPRS. In regard to the housing market and the price sensitivity that currently exists in relation to housing affordability. In view of the now significant differences between new residential dwellings and the existing housing stock, HIA believes further consideration should be given to the Housing Affordability Senate Inquiry suggestion that an appropriate incentive should be paid to purchases of new housing.

Incentives aimed at rewarding environmental efficiency achieved in new housing should offset the cost of the CPRS, a proportion of other environmental requirements and would assist in improving not only housing affordability but would assist in meeting underlying demand requirements.

3.1 Additional imposts

Despite offsets for the additional cost in fuel over the initial years of the CPRS the implementation of the scheme will see the cost of transport rise. The building materials sector is clearly dependent on the ability to distribute their products to the market. In 2013 when the fuel offset is removed, there will be an additional layer of costs associated with the CPRS for building product manufacturers.

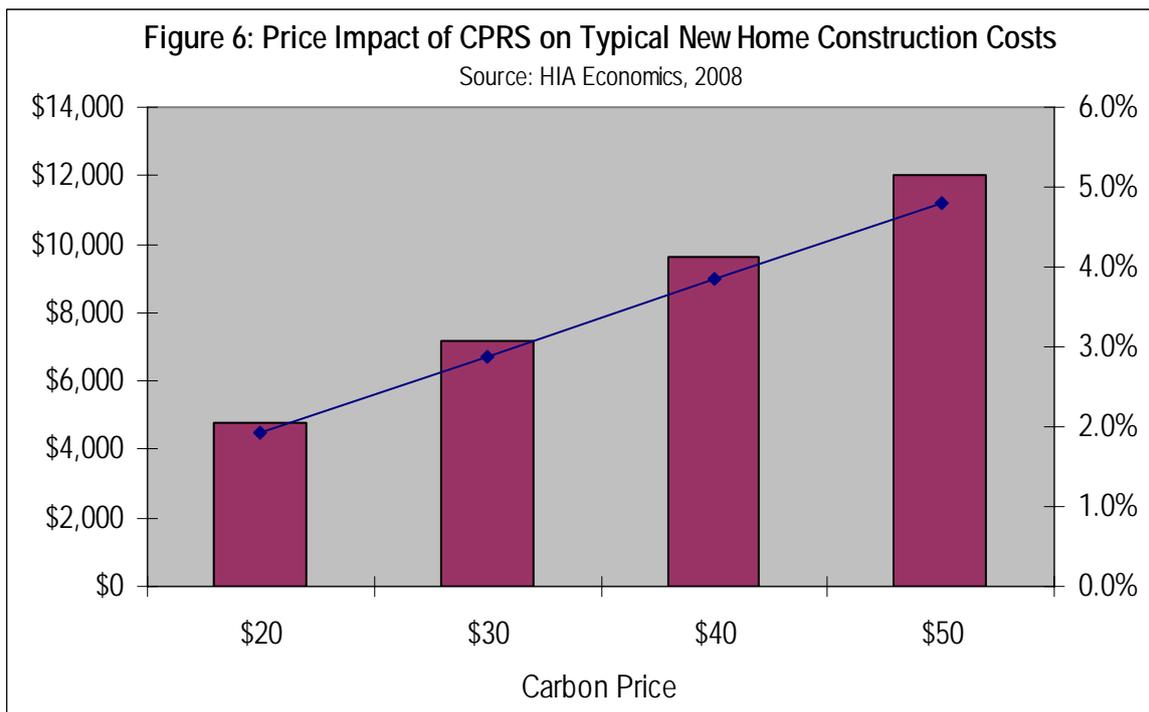
The recent shift in the method of greenhouse gas accounting under the National Greenhouses Emissions Reporting Scheme now means that energy suppliers are required to report their indirect emissions, rather than the manufacturing sector taking on responsibility for these emissions.

Regardless of this shift, the cost of the CPRS to the manufacturing sector will include the increased cost of energy. Therefore when considering the cost impacts of the CPRS on new housing, the increases in both transport and energy pricing must be considered.

4 Impact on housing affordability

HIA calculations based on CSIRO research and independent research⁸ indicates that the embodied energy within the construction materials for a new home generates 160 tonnes of CO₂ and an additional 80 tonnes for infrastructure requirements.

The impact of a carbon price on the new home building market will depend heavily on the final design of the CPRS. Taking a carbon price of \$20 per tonne, the additional cost to the typical new home is estimated to amount to an additional \$4800. The implementation of the CPRS and other proposed and muted environmental proposals are estimated to add between \$12,000 and \$15,000 to the cost of a new dwelling.



4.1 Disadvantage faced by highly efficient housing

New housing is already a highly regulated product and the CPRS will lead to increased costs in construction materials and hence the cost of new housing.

However, it is important to recognise that building products have a life span which far exceeds their initial production emissions and over the life of a building material or product, their application in a building can effectively work to reduce the operational emissions of that building. Therefore construction emissions versus operational emissions should be recognised when the Government considers the impact of the CPRS on new housing and buildings.

In relation to energy efficiency, new homes are now subject to a range of requirements aimed at reducing the operational energy of homes. The primary vehicle at present is the application of the thermal performance requirements under the Building Code of Australia (BCA) which require 5 star designs in Victoria, South Australia, ACT and Western Australia, 4 stars in Tasmania and the Northern Territory and in 2009, 5 stars in

⁸ www.carbonneutral.com.au



Queensland. NSW operates outside the national framework applying the BASIX assessment tool, which is understood to require an equivalent 4 star rating.

The thermal performance requirement is aimed at the construction of a new home, with certain building materials being more advantageous than others in achieving a 5 star rating. The aim of improving thermal performance is to reduce the need to actively heat or cool the building, hence reducing operational emissions.

Most States and Territories have introduced a suite of actions to address the direct operational emissions in new homes, such as minimum performance requirements for hot water systems, lighting and air-conditioners. Complementary to these, several water efficiency requirements also have the benefit of reducing operational energy use in the home, such as 3 star showerheads and tap ware.

Table 5 shows the current thermal performance and operational energy regulations on new homes in each State and Territory.

| | QLD (BCA plus) | NSW (BASIX) | ACT (BCA) | Victoria (BCA + plus) | Tas (BCA) | South Australia (BCA) | Western Australia (BCA) | Northern Territory (BCA) |
|-------------------------------|----------------|-------------|-----------|-----------------------|-----------|-----------------------|-------------------------|--------------------------|
| Building fabric (star rating) | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| Hot water services | ✓ | ✓ | ✗ | ✓ | ✗ | ✓ | ✗ | ✗ |
| Light fittings | ✓ | ✓ | ✗ | ✗ | ✗ | ✗ | ✗ | ✗ |
| Air conditioners | ✗ | ✓ | ✗ | ✗ | ✗ | ✗ | ✗ | ✗ |
| Swimming pool pumps | ✗ | ✓ | ✗ | ✗ | ✗ | ✗ | ✗ | ✗ |

HIA believes that the impact of the CPRS on new housing through increased costs of building materials must be considered in light of the current and future likely increases in the regulation of operational energy in new homes through both higher thermal performance standards and additional operational energy requirements.

It is also important to recognise that the CPRS will impact more on some building materials which are recognised as being essential to achieving improved thermal performance in new housing. Clearly, wall construction, floor material and window selection are key features, all of which will be affected by the CPRS. The CPRS may inadvertently lead to lower prices for materials which are not captured in the scheme and which are less energy efficient. If consumers and the housing industry choose to use these materials to avoid the impact of the CPRS, it will create a flow on effect whereby the operational energy use of the home is likely to increase, rather than decrease.

5 Complementary measures

The Green Paper is limited in its consideration of the complementary measures that could assist all households (new and existing) to deal with the introduction of the CPRS and in particular, the impact of higher energy prices. The focus of the Paper is limited to taxation and financial assistance for households, with no consideration of the potential for long lived efficiencies that can be gained from physical improvements to the existing 8.5 million existing homes in Australia.

HIA believes that the funds raised by the CPRS must be appropriately apportioned to existing and future households through targeted actions that achieve improvements in the operational energy used in homes.

5.1 Building standards

As discussed above, current building regulations focus on thermal performance, with some states addressing a limited amount of operational energy aspects.

HIA acknowledges that new homes should meet an acceptable benchmark and this should be a combination of the building fabric and energy services, such as hot water, lighting and air conditioning. However, HIA does not support an unfettered approach to increasing the regulation of new homes, whilst little or no real action is taken to address existing homes.

There is still considerable scope for reducing the operational emissions of new homes through measures targeted at the energy services of a home, rather than focusing solely on building fabric standards.

5.2 Appliance standards

HIA believes that these other 'low hanging' options such as home appliances and fixtures should be the focus of attention over the next 5 years. These options can improve the operational energy performance of both new and existing homes. The Federal Government programs to phase out inefficient hot water systems and lighting options along with the ongoing development of Minimum Energy Performance Standards will play a major role in this regard.

To this end, HIA believes that funding from the CPRS should be focused in this area as a priority. These improvements will provide households with ongoing efficiencies which are applicable in any home and effective regardless of the way the home owner operates the home.

Having said this, HIA is concerned with ongoing moves by some states to pre-empt the national initiatives, which only further frustrates the manufacturing sector which will be dealing with the CPRS. These measures should be introduced nationally to provide greater certainty for the manufacturing sector and avoid circumstances where a building product or appliance can be installed in one state but not another.



5.3 Rebates & incentives

Support for existing households should be enhanced and should include appropriate rebates to take up more costly, but highly efficient technologies, such as solar hot water and photo-voltaic systems. Again, these changes provide long lived improvement for the household in terms of reduced energy bills.

The Federal Government has indicated its intention to return the funds raised through the CPRS to affected households. HIA believes that this should include increased support for rebates and incentives which will improve the operation of the 8.5 million existing homes for the remainder of their life.

HIA also believes that these funds should be used to support new home buyers who will be required to pay for increased costs of building materials and construction as discussed above. HIA believes that the Federal Government should consider offsetting the cost of the CPRS for all news homes constructed after the scheme commences in 2010.



6 Offsetting the impact on new housing

It is unclear what the ultimate impact of the CPRS and regulations will be on new housing at the time of introduction in 2010. However, the Federal Government should recognise the public benefit that is being achieved through the application of the CPRS and other regulations on 150,000 new housing a year.

Continued tightening of regulatory standards as discussed in section 4 for both building fabric and operational energy will continue to add to the construction costs of new homes.

While the intentions of such measures are laudable, the upfront cost for the first home buyer is becoming increasingly prohibitive.

With first home buyer affordability at record lows and new housing supply well short of the demands of a growing population, it is important that new home buyers are not unreasonably affected by the introduction of the CPRS.

To this end, HIA calls on the Federal Government to consider additional incentives to offset the costs faced by purchasers of new dwellings.