

14 April 2009

Committee Secretary
Senate Select Committee on Climate Policy
PO Box 6100
Parliament House
Canberra ACT 2600

The brick industry welcomes the opportunity to comment on climate policy and the impact it will have on brick industry.

Collectively the brick industry employs 30,000 people, produces approximately 1.6 billion bricks annually and contributes \$2.6 billion to the Australian economy. The brick industry is also a significant provider of apprenticeships and training with investment of over \$3.5 million annually.

This is a submission by the Australian brick industry association – Think Brick Australia – and makes comments on behalf of the entire industry that includes both big and small manufacturers. Given these differences and other competitive advantages the brick companies have managed to create between themselves, this submission does not replace or override submissions made by individual brick manufacturers themselves.

Despite competitive differences between the companies, there is common concern about the impact of climate policy across the industry. Outlined below is a brief summary of that impact.

1. The brick industry operates within the building products markets that includes a large number of substitutes – many of which will incur little or no CPRS cost increases – and which reduces the industry's ability to pass the emissions cost onto consumers. Furthermore, the carbon price may increase the number of import substitutes from Asia which have previously not been economically viable, and for which little meaningful data exists to determine timing, quantity or actual impact.
2. Substitutes within the building product market vary greatly in their ability to provide energy efficient housing or reduce the long-term emissions associated with maintenance, up-keep and replacement. For example lightweight building products have lower production emissions but require more maintenance, need to be replaced more often, and create less thermally efficient building envelopes. Conversely, bricks have higher production emissions but require almost no maintenance or replacement and provide a more thermally efficiency building envelope.
3. The capital costs in the industry are relatively high and no technology currently exists to significantly reduce the emissions intensity of the industry. Furthermore, existing technology (which currently have life spans of 30-50 years) have no alternative value within a low carbon economy.

After careful review of the current & proposed climate policies, the brick industry believes four issues need to be reviewed to improve carbon reduction in Australia.

1. Distribution of carbon costs and compensation
The carbon cost and compensation across markets where multiple industries compete will have different, disproportionate and unfair impacts on individual products in spite of potential life cycle emission savings of the material in a building.
2. Energy efficiency measurement
There is a limited understanding of energy efficiency measurement and a general assumption that improving energy efficiency in buildings requires 'more insulation'.
3. Incentives to upgrade or build new manufacturing facilities in Australia
The emissions trading scheme creates a perverse incentive to build smaller manufacturing plants which reduces the efficiencies provided by larger plants. Furthermore, little incentive exists to invest in research & development to upgrade existing plants.
4. Alignment between Federal, State & Local Government climate policies
Insufficient support of national climate policies at Local and State Government levels with respect to building approvals for new manufacturing facilities.

This submission provides information in support of these four issues. Included with this submission is a copy of a recent report commissioned by Think Brick Australia, *Wasting Energy*, which outlines potential changes to the Building Code of Australia (BCA) that would reduce the inequitable distribution of carbon costs and compensation across the building products market.

Distribution of carbon costs and compensation

Brick manufacturers operate within the building products market which is highly competitive, and according to IBISWorld Industry report, "*the domestic market for clay bricks is shrinking independently of fluctuations in the building cycle due to the increased use of substitute building materials and the trend toward smaller and higher-density dwellings.*"¹ The building product market exemplifies the principal – agent barrier to achieving greater energy efficiency.

Success within the building products market comes from the product being specified by the 'client'. In many cases this isn't the end user (a home owner), but rather an architect, developer or builder. Within this context, many major considerations of product performance are overlooked for either cost or aesthetic concerns.

Product performance in the building product market is regulated by the Building Code of Australia (BCA) to ensure that materials are both safe and thermally effective. Within the residential building market, the minimum R-value requirement² of walling systems has the greatest influence on building envelope selection. The exclusive focus on R-value has created a number of new building product innovations that attempt to create the highest R-value³. This is problematic because research by the University of Newcastle (outlined in the *Wasting Energy* report) demonstrates that high R-value products alone cannot improve the energy efficiency of homes.

The CPRS will impact the building products market dramatically because:

- The carbon price will be distributed differently across the building products market. Bricks and concrete, the primary choices of builders and developers will have increased costs, whereas timber and other lightweight building

¹ IBISWorld Industry Report, *Clay Brick Manufacturing in Australia: C2621*, Dec 2006, pg 13

² Building Code of Australia, Table 3.12.1.3, Vol 2, pp 512-514

³ For an example, see attached advertisement for 'ThermaWall Plus' from *Building Products News* March 2009, pg 13

products will have minimal increases. This will reduce the ability of the brick industry to pass on the carbon cost.

- EITE payments further distort the choice between bricks and concrete because compensation awarded to cement manufacturing activities off-sets the cost increases for concrete. Unfortunately because production for domestic and export markets occur in the same manufacturing plant, even activity based compensation cannot prevent the compensation flowing through to the domestic market.
- The cheaper manufacturing cost structures in Asia and other parts of the world will over time make import substitution a problem.

Energy Efficiency Measurement

There is a general assumption across the economy that energy efficiency, especially energy efficiency in buildings, is achieved by the addition of insulation. While insulation is a large part of the energy efficiency equation, the evidence collected by the University of Newcastle proves that insulation is only half the equation. The other half is provided by thermal mass (ie bricks and concrete).

This assumption is reinforced within the Building Code of Australia (BCA) by the deemed-to-satisfy provisions which stipulate minimum R-values to meet a building's energy efficiency requirements. Although the BCA outlines a number of different ways to meet the minimum energy efficiency requirements, the explicit nature of minimum R-value provisions, combined with a market perception (real or perceived) that the other methods incur higher costs, have created two outcomes: (1) product innovation based solely on increasing R-values, and (2) cheaper-to-build houses that are less efficient and more costly to maintain for families in the long-term.

To improve energy efficiency and reduce Australia's carbon use, specific attention needs to be given to energy efficiency measurement in buildings to ensure that we are not only measuring the right thing, but that we are doing it in the right way.

As outlined in *Wasting Energy*, this should include two things (1) a new thermal performance metric that combines both thermal mass and thermal resistance, and (2) life cycle analysis that incorporates both production emissions and operational energy savings.

While both these options require further research to refine, energy efficiency measurement needs to be a national priority and added to the National Energy Efficiency Strategy being developed by COAG.

Incentives to upgrade or build new manufacturing facilities in Australia

The brick industry has undergone significant rationalisation over the past 20 years and currently has three major players: Brickworks (Austral bricks), Boral Brick and CSR (PGH). Given the industry's high capital costs, brick manufacturing has largely been centralised on a state-by-state basis within large, high volume plants that leverage economies of scale.

A perverse outcome of the current set of climate policies is the incentive to move away from these high volume manufacturing plants and move to smaller operations that do not trip the reporting thresholds.

Furthermore, and perhaps more significantly, brick manufacturing is a mature technology. The industry (both in Australia and internationally) has experimented extensively with additives and alternatives to reduce firing temperatures, however, short of using unfired bricks (which significantly reduce strength, durability and life-span) there are no alternative technologies currently available.

In addition to this, the rationalisation of the industry and its manufacturing structure around high-volume, state based production to leverage economies of scale and reduce transport costs included the implementation of many energy efficiency projects. The result is that most of the 'low hanging fruit' projects to off-set emissions trading driven energy price increases have already been exhausted and that there are no immediate opportunities based on current technologies to reduce the energy intensity of brick manufacturing.

Missing from the current suite of climate policies are genuine research and development incentives where outcomes are not guaranteed. All new technology research conducted by the industry would be at significant additional cost with very long (and no guarantee of) return on investment. To date, most of the genuine research and development incentives have been industry specific (ie clean coal).

Alignment between Federal, State and Local climate policies

Although there are many other individuals and groups better qualified to comment on the alignment of climate policies across all levels of Government in Australia, the brick industry has the following observations:

- Investment in higher volume, more efficient plants is already stymied by existing local government restrictions or conditions within the development application process
- State-based carbon reduction policies may not achieve the cheapest carbon abatement especially around electricity production given the different carbon intensities of each state.
- State-by-state, and in some cases, Council-by-Council incentives for renewable energy, solar hot water and other technologies, mandatory disclosure, and/or higher star ratings may create perverse outcomes where new development occurs instead of retro-fitting. While the new building may be more efficient, the additional emissions to build, and already sunk emissions of the building knocked down, may outweigh savings made.

In order to minimise duplication and maximise Australia's carbon reduction a national strategy that incorporates all levels of Government should be developed.

In conclusion, the brick industry would like to state its support for better carbon policy in Australia.

If you would like to discuss any of the issues raised in this submission, or learn more about the brick industry's energy efficiency research with the University of Newcastle, please contact me on ross.maher@thinkbrick.com.au or by phone on 0408 317 560.

Yours sincerely,



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