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Submission to The Senate Enquiry into the Energy Efficient Homes Package

By

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Long term financial impact on Australian insulation manufacturers

To put all the comments in this paper into context it is important to note that, on the whole, Australian manufacturers have not benefited from the Home Insulation Program. Quite to the contrary: what might otherwise have been twenty years demand for retro-fit insulation has been condensed into one or two years.

This has provided the opportunity for importers – including Australia’s leading insulation manufacturers – to bring in products which have never before been able to compete effectively in the Australian market because they fail to meet Australian Standards. Most of the sales of imported insulation represent a direct long-term loss to the Australian industry.

This is cogently and convincingly argued in a note by Julian Bu of Citigroup, dated February 4, 2009, on the impact of the program on CSR, the Australian company with the most direct exposure to the insulation market. (See attachment.) The share price subsequently dropped in line with expectations.

Support for economic stimulus and long term industry interest

Despite the cost to our company, Amalgamated Metal Industries Pty Ltd (“AMI”), supports the program both for the economic stimulus which it has provided to the country – providing direct employment through the recession for many Australians – and flow-on jobs for many more.

We also applaud the increased focus on greenhouse gas abatement which this program signals. We believe that this momentum has helped to win public and industry support for increased stringency in energy provisions of the Australian Building Code, allowing Australia to improve its greenhouse gas performance while actually saving Australian families money. AMI is taking a very long-sighted view of the interest of the industry.

Effectiveness of program implementation

On the whole, we believe that the implementation of the program was as effective as can reasonably have been expected. A very large number of claims have been processed and although some outrageous frauds have been perpetrated, there has been enough auditing of the programme to keep the most egregious examples of this to a minimum.

In the judgment of the author of this submission, Michel Boström (himself a former Senior Policy Analyst with the New South Wales Treasury), the roll-out of this program has been uncommonly smooth for such a large program launched on very short notice.

Departmental and Ministerial response to safety issues

Unforeseen problems are inevitable in any large-scale initiative in the public or private scale. The important thing is that the agency implementing the initiative be willing to consult with those affected as well as with relevant experts to achieve the most effective resolution.

In the case of the reflective insulation industry, there was a very unfortunate electrocution in October of a worker while installing reflective insulation. Competing industry segments took this as an occasion to call for reflective insulation to be banned claiming that foil insulation was inherently unsafe.

We were shocked and saddened by the event. We were also extremely surprised. As we are not aware of any electrocutions in over fifty years of installation of reflective insulation in Australia prior to this programme, we took the view that reflective insulation was not inherently unsafe, but rather that there had been a sudden influx of untrained workers into the industry, in many cases in companies managed by management with no prior experience in the building industry.

While in the past the industry had always relied on staff learning how to work safely on the job, it appears that this was no longer good enough with so many new staff – and, more importantly, new companies – in the system. (It should be pointed out that no member of the Aluminium Foil Insulation Association (“AFIA”) – most of whom have been in business for many years – was involved in this accident.)

AFIA engaged a consultant – Professor Alex Baitch – to develop a comprehensive set of safe work practices to ensure that AFIA installers would minimise risk as much as possible. In this AFIA received the support and co-operation of the Department of Environment Water Heritage and the Arts (“DEWHA”), which acted extremely promptly to take a number of steps to reduce risk.

The correctness of our belief that the problem was in training and experience rather than any inherent problem with foil insulation, was very sadly vindicated a month later when a second young man was electrocuted while installing fibreglass and then a little later a third man died of heat prostration, also while installing bulk insulation.

All three deaths were preventable and while no construction site can ever be 100% safe, it is to be hoped that the measures taken by AFIA and by DEWHA will mean that we have no more deaths during the course of this program.

We applaud the response of DEWHA and of the Minister for the Environment in rejecting calls to ban foil, which would have been an easy way – out at the expense of eliminating the most effective and appropriate class of ceiling insulation for tropical and sub-tropical climates. Instead, they reacted intelligently and appropriately.

The safety of reflective insulation at present

The President of the Master Electricians Association (“MEA”), Malcolm Richards, has expressed the view that 90% of the problem that he had with reflective insulation was with the use of metal fasteners by untrained staff in an area of the house where one would expect to find electrical cables, and that the remaining 10% was an issue of training and procedures.

The first issue has now been addressed through the elimination of metal fasteners. The second has been largely addressed by the development of additional Departmental; guidelines as well as the AFIA installation standards. The MEA has endorsed these guidelines. (See attachment e-mail from Malcolm Richards.)

We support the on-going efforts of DEWHA to raise safety standards in the industry as a whole.

Response to Commercial Issues

The Government must take more responsibility for policing the market-place for compliance with Australian Standards and for imports passing off as the product of Australian manufacturers.

One of the results of the remarkable market opportunity of being able to provide insulation virtually “free” to households has been that much of the flood of imports in the market has been of products that do not meet Australian Standards. These products could not be effectively marketed in a normal market: end-users who are parting with their own money are more wary; and in normal times regulators, including the ACCC, are able to keep a closer eye on product claims.

Even though the insulation is often “free”, however, there is always a certain reluctance on the part of consumers to accept imported product of uncertain origin and quality. Many on-sellers get over this by simply passing off the product as that of a reputable Australian manufacturer. This they can do with virtual impunity as a legal passing-off case can be expected to take months or years to reach the courts, by which time the offenders will have wound up their fly-by-night companies and made off with their ill-gotten profits.

In a normal market it is the responsibility of the product’s suppliers to defend their intellectual property and to prosecute infringers. It is our view that under the circumstances of the Energy Efficient Homes Package (“EEHP”), the Government should take responsibility both for the sake of Australian manufacturers and their employees, and for the sake of Australian consumers, who are equally the victims of these fly-by-night operators.

DEWHA has now started to take responsibility for this. Since December 23, DEWHA has implemented an on-line list of products that are approved for the program, having had their claims to compliance to the Australian Standard verified by DEWHA, this is an appropriate first step but more is needed.

Deceptive descriptions of insulation

Regulation of the insulation industry has been bedevilled by the continuing use of the description “Material R value” on most bulk insulation products. This relates to the thermal resistance of a product itself considered in isolation and measured in a laboratory under controlled conditions. This is an appropriate measure for comparing two similar insulation products against each other. It is a highly unscientific way of describing an insulation system taken as a whole. What is relevant to building energy performance and comfort is the thermal performance of the building element – the roof/ceiling or the wall system – considered as a whole.

This use of material R values in regulation has come about due largely to the influence of the fibreglass lobby and constitutes a departure from the current internationally accepted practice of writing codes and standards in terms of relevant performance criteria. The relevant performance criteria here, of course, being the performance of the building system in situ, not that of a component of the system in a lab.

The best insulation for tropical systems

Another major issue has been the failure of the BCA regulations and the EEHP to take account of the benefits in tropical and sub-tropical climates of the relatively low thermal resistance of reflective insulation systems against heat flow up. This means that foil systems are a one-way heat valve: high resistance against heat coming in; but low resistance to shedding heat at night.

Before the Energy provisions of the BCA were prepared, Professor Aynsley, former Head of the Australian Institute of Tropical Architecture, advised the ABCB to specify **minimum** R value for heat flow down together with a **maximum** R value for heat flow up. To my knowledge, the impact of such a regime was never modelled in preparing the BCA amendment, once again presumably because it would have excluded bulk insulation from consideration, even though it would have led to a superior result in terms of comfort and energy savings for the Australian community.

Condensation issues

The EEHP and the BCA have almost completely ignored the issue of condensation in walls in humid climates where heat flow is consistently in one direction: e.g. the Australian tropics and sub-tropics. I attach a report prepared by Architects Macks and Robinson and Engineers Blain Bremner and William on the extensive structural damage caused by moisture accumulation at the Gove Aluminium township at Weipa, Cape York Peninsula, due to inadequate vapour barriers used in conjunction with bulk insulation. (See attachment.)

Under the EEHP, as indeed in new buildings insulated in accordance with the BCA, no vapour barriers are installed at all. In Europe and North America the absence of a moisture barrier on the warm side of any insulation would be considered a very serious breach of quality standards by relevant regulatory authorities.

If no vapour barrier is present, moisture will condense from air infiltrating through the insulation when it reaches the “dew line”, i.e. the point at which the air has cooled so much that relative humidity reaches 100%. At this point water condenses. Over time the water builds up, absorbed by the bulk insulation like a giant sponge, until eventually serious structural damage can result, as a Weipa.

The author of this submission is experiencing this whole development with a terrible sense of déjà-vu, having been through the implementation of retro-fit insulation in both Canada and Sweden after the oil-price crisis of the 1970s.

I advised an ABCB technical committee (of which I was a member) of my concerns some years ago, with the support of Doctor Harry Trethowan, a noted New Zealand expert in the field. The structural damage that will be caused by the neglect of vapour barriers around bulk insulation in the warmer climates of Australia could well be in the hundreds of millions. The ABCB has recently taken steps to address this issue.

My purpose here is not to criticise the ABCB who must contrive to win the support of all the states for every amendment, as well as being subject to pressures from the leading building materials firms and from the building industry associations which have tremendous political power. Quite to the contrary, I address myself to the

members of the Senate and plead with them to ignore lobbying by special interest groups and support the bureaucracy in its efforts to seek the best technical solutions.

There is a very strong case for banning bulk insulation in Zones 1 and 2 (coastal climates North of Port Macquarie) entirely on the grounds that they retain heat at night. Together with the condensation issues when inadequate – or, much more commonly, no – vapour barriers are used, the case for banning bulk insulation in these climates is overwhelming.

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19 January, 2010