



INSULATION COUNCIL OF AUSTRALIA AND NEW ZEALAND

---

Submission by the Insulation Council of Australia and New Zealand

To

Senate Standing Committee on Environment, Communications and the Arts  
Inquiry into the Energy Efficient Homes Package

Friday, 18 December 2009

## Content

An extract from President Obama’s address to Home Depot - 15 12 2009 .....	3
Background.....	4
1. Improved building energy efficiency is a first response.....	4
2. EEHP - a welcomed response .....	5
3. Significant long-term market failure .....	6
4. Benefits of insulation to the householder .....	7
5. Benefits to the taxpayer from retrofitting insulation.....	9
6. Issues concerning the administration of the EEHP .....	10
7. Extending EEHP program.....	15
8. Non-compliance with EEHP program standards and requirements.....	15
9. Managing electrocution risks .....	16
Conclusions.....	17
Recommendations .....	18

## An extract from President Obama's address to Home Depot - 15 12 2009<sup>1</sup>

*"I don't need to remind them or any of you about the situation we found ourselves in at the beginning of this year. The economy was in a free-fall. As a result of our financial crisis, folks couldn't access affordable credit to run their businesses, or take out an auto loan or a student loan or, in some cases, pay their mortgages. Home values were plummeting. And we were haemorrhaging about 700,000 jobs per month.*

*Today, the economy is growing for the first time in more than a year, and November's job report was the best that we've had in nearly two years. But the fact is, even though we've stopped the rapid job losses that we were seeing just a few months ago, more than seven million Americans have lost their jobs in the two years since this recession began. Unemployment still stands at 10 percent. I know the idea may not be very glamorous -- although I get really excited about it. We were at the roundtable and somebody said insulation is not sexy. I disagree.*

*In our nation's buildings -- our homes and our office consume almost 40 percent of the energy we use and contribute almost 40 percent of the carbon pollution that we produce and everybody is talking about right now in Copenhagen. Homes built in the first half of the last century can use about 50 percent more energy than homes that are built today. And because most of our homes and office aren't energy-efficient, much of that energy just goes to waste, while costing our families and businesses money they can't afford to throw away. The simple act of retrofitting these buildings to make them more energy-efficient -- installing new windows and doors, insulation, roofing, sealing leaks, modernizing heating and cooling equipment -- is one of the fastest, easiest and cheapest things we can do to put Americans back to work while saving families money and reducing harmful emissions.*

*So what we want to do is create incentives that stimulate consumer spending, because folks buy materials from home improvement stores like this one, which then buys them from manufacturers. It spurs hiring because local contractors and construction workers do the installation. It saves consumers money -- perhaps hundreds of dollars off their utility bills each year -- and it reduces our energy consumption in the process. In other words, most of this stuff is going to pay for itself. You put in the insulation, you weatherize your home now, you will make up that money in a year or two years or three years, and then everything after that is just gravy. But the challenge for a lot of people is getting that money up front. They know that this is a smart thing to do, but times are tight right now and it's hard to afford making that capital investment. And that's where the government can come in to provide the incentive to help people make that initial investment so that they can recover that money over the long term*

*And right now -- I just heard from the CEO, because Australia put an incentive to do exactly what we're talking about, they've seen a huge increase in their volume of exports -- exports to Australia. Well, why can't we do the same thing here? When it comes to contractors, contractors all around the country know that this is work they can do, they can do effectively, they can do well, and it's a reliable business. It's not going to be subject to as many of the vacillations as home sales are in the current environment where you've got a soft housing market. So this can help fill the void in a major industry that's taken a big hit. And the workers, we have somebody who just got trained and is already on the job crawling through attics and putting all this stuff together. Over the course of six months or a year, somebody can get trained effectively. And LIUNA is doing terrific work with this -- its apprenticeship program. And what this means is that people who are unemployed right now, they can get a marketable skill that they can take anywhere. So this is a smart thing to do, and we've got to get beyond this*

*So this is a smart thing to do, and we've got to get beyond this point where we think that somehow being smart on energy is a job destroyer. It is a job creator. But it's going to require some imagination and some foresight, and it requires us to all work together. That's what this White House is committed to doing. I know that's what all of you are committed to doing. I'm excited about it. I hope you are, too. See, I told you, insulation is sexy."*

<sup>1</sup> Transcript President Obama Remarks ON ENERGY EFFICIENCY AND JOB CREATION December 15, 2009

## Background

Buildings represent around 19% of Australia's total energy consumption and produce approximately 23% (residential 13%, Commercial 10%) of Australia's greenhouse gas emissions.

Energy consumption from buildings continues to grow both in absolute and percentage terms. Due to its significant impact on Australia on energy production capacity and the environment, addressing energy demand and emissions from buildings is of vital importance, particularly as data shows these emissions are growing well in advance of earlier predictions.

Prior to the EEHP around 5% of product was imported and the market for the installation of insulation involved:

- new homes – 50%
- retrofit existing homes 10%
- commercial/industrial 40%.

ICANZ members manufacture glasswool, rockwool and reflective foil insulation. Glasswool and rockwool account for around 70% of the domestic market and involves two manufactures – CSR Bradford and Fletcher Insulation.

Cellulose, polyester, foams, foils, sheepswool etc make up the rest involving around 30 manufacturers in Australia.

ICANZ is a leading advocate for improved building energy efficiency. With leading expertise, ICANZ welcomed the introduction of the Energy Efficient Homes Package (EEHP) because it promised to address, in total, long standing market failures, which have resulted in the very poor energy efficiency of Australian housing stock.

## 1. Improved building energy efficiency is a first response

There is now universal agreement that energy efficiency is the single most important policy response to address burgeoning energy use effectively, subsequent carbon emission, and pollution and climate change mitigation.

While energy supply measures will increase the cost of energy, energy efficiency measures substantially reduce wasteful energy use and cost. The cost benefits for climate change mitigation are also substantial. From our own review of international and domestic studies, ICANZ concurred with the Stern Report's<sup>2</sup> conclusions:

*"... energy efficiency has the potential to be the biggest single source of emissions savings in the energy sector. This would have both environmental and economic benefits: energy efficiency measures cut waste and often save money."*

The international research company, McKinsey & Co<sup>3</sup> found that in Australia:

*"By 2030, a total of 60Mt of carbon-reduction opportunities can be found in the building sector all at low or negative cost. Most of these opportunities (~50Mt) can be implemented today. Australia's relatively low level of insulation creates significant opportunities for increase energy efficiency in residential and commercial buildings."*

Australia is well behind other developed countries. For existing buildings with poor thermal performance, insulating ceilings is a first response, if Australia is to bring its housing stock up to the standard of our contemporaries.

Australia's minimum energy efficiency standards for new building construction remain significantly lower than international standards in countries with similar climates and costs of energy. This will still be the case if Australian minimum standards move to 6 star in the 2010 Building Code of Australia (BCA).

Studies Initiated by the Australian Greenhouse Office during 2006 compared the building regulations in other

<sup>2</sup> Stern Review – The Economics of Climate Change 2006

<sup>3</sup> McKinsey & Co's<sup>3</sup> 2008 'An Australian Cost Curve for Greenhouse Gas reductions.

OECD countries with similar climates and energy prices to Australia. These studies showed that their building fabric regulations were equivalent to a rating of 6 or 7 stars in Australia. Many of these countries have since further increased their energy efficiency stringencies.

For example, despite the effects of the Global Financial Crisis, the USA has improved their building energy efficiency standards by a further 15% since this study was completed.

By moving to 6 stars, Australia is simply bringing its standard closer to those countries with similar conditions.

International Minimum comparisons				
Australian Climate zones		Current Star rating required 2009	US,UK, Canada Equivalents	Star rating equivalent 2007
Zone 1	Darwin	3.5	Florida	7
Zone 2	Brisbane	5.0	Texas	6
Zone 3	Longreach	3.5	Nth. Carolina	5.4
Zone 4	Dubbo	5.0	Arizona	7
Zone 5	Perth	5.0	California (Bakersfield)	7.5
Zone 6	Melbourne	5.0	California (San Francisco)	7.6
Zone 7	Hobart	4.0	UK & Canada	7.2
Zone 8	Thredbo	5.0	Pennsylvania	6.8
All Zones Average		4.8		6.8

+15%  
2009

Until recently, mandatory minimum levels of energy efficiency were not required as part of the BCA. It was not until 2004 that national minimum energy requirements were introduced for housing. Similar minimum energy standards were initiated in 2005 for commercial buildings. Now that energy efficiency regulations have been introduced, there is a mechanism to address improved energy efficient stringencies in new construction.

As a consequence of this, there remains among Australia's housing stock a significant and lasting legacy of energy inefficiency, which will remain in operation for at least the next 40 years.

## 2. EEHP - a welcomed response

Prior to the introduction of the Energy Efficient Homes Package (EEHP), a significant proportion of Australian homes (up to 2.7 million or 40%) did not have insulation. This conclusion was derived from the ongoing Australian Bureau of Statistics (ABS) surveys *'Environmental issues: People's Views and Practices'* conducted since 1986 by the Australian Bureau of Census and Statistics. Four of these surveys (1994, 1999, 2002, and 2005) have asked questions on housing insulation and energy use within houses. The surveys are based upon reports from household occupants, rather than inspection and/or physical auditing by trained personnel.

The most recent data for basic insulation are shown in Table 1.

Table 1. Proportion of Australian dwellings insulated (2005)									
	NSW	VIC	QLD	SA	WA	Tas	NT	ACT	Aust.
Proportion									
With insulation	54.4	72.3	43.2	78.2	65.6	74.8	49.2	78.5	60.5
Without insulation	24.9	9.2	35.5	8.7	20.4	12.2	16.4	3.6	20.6
Don't know	20.7	18.5	21.3	13.1	14.0	13.2	34.4	17.9	18.9

*ABS Cat 4602.0, March 2005, Environmental Issues: People's Views and Practices*

While various state regulations require new houses to have a minimum level of insulation, or energy efficient standards, a substantial proportion of the Australian housing stock is uninsulated, and many more are under-insulated. When interpreting Table 1, note that in our view and experience, most of the 'don't know' responses shown will be from households that do not have ceiling insulation (approximately 80 per cent).

Moreover, some houses with insulation do not have ceiling insulation, and some with ceiling insulation are sufficiently under-insulated to be classed as uninsulated (in particular, houses with only reflective foil insulation).

Overall, therefore, it is estimated that up to 40 per cent of dwellings in Australia do not have ceiling insulation. The numbers of houses, which are considered uninsulated, are presented in Table 2 below. Note that the analysis in this report only involves separate houses, semi-detached houses, and row or terrace houses. It does not include ceiling insulation for apartments or flats roof houses.

Over the 10-year period the proportion of insulated houses with wall insulation increased slowly but steadily from around 25 per cent to 32 per cent, as would be expected with modern insulation practices for new homes and some retrofitting of old homes. There may be some under-reporting of wall insulation due to occupants not knowing what is in their walls, but without detailed surveying based upon physical inspections this remains unknown.

Given that reflective foil insulation for external walls has been a requirement of the Australian building codes since 1991, and that bulk insulation in walls was not required until 2005, it is reasonable to assume that most new and older homes do not have bulk insulation in the walls, and homes built before 1991 have no reflective foil insulation.

Floor insulation is very also rare and is found in one percent of houses or less, although the percentage of houses with timber floors and sub-floor air spaces is declining as slab floor construction increases. Within the significant uncertainty of many of these numbers it is clear that the overwhelming majority of Australian homes have no bulk insulation outside the roof and ceiling.

<b>Table 2: Number of homes un-insulated (2005)</b>									
	<b>NSW</b>	<b>VIC</b>	<b>QLD</b>	<b>SA</b>	<b>WA</b>	<b>Tas</b>	<b>NT</b>	<b>ACT</b>	<b>Aust.</b>
Uninsulated Homes 000's	977	471	843	133	265	49	28	22	2,788
Total Housing Stock 000's	2,089	1,763	1,369	616	744	187	45	177	6,930
% of homes uninsulated	47%	27%	62%	22%	36%	26%	62%	12%	40%

*ABS Cat 4602.0, March 2005, Environmental Issues: People's Views and Practices*

### 3. Significant long-term market failure

Significant and long-standing market failures in the insulation and building energy efficiency industry have resulted in up to 40 percent of Australian housing stock being either uninsulated or poorly insulated.

Split incentives in rental accommodation, lack of access to capital and imperfect understanding of key market intermediaries such as builders and designers are some of the market failures that contribute to this problem.

#### The case for improved energy efficiency and insulation

The case for improving energy efficiency now, and on a large scale, is compelling. Once correctly installed the right bulk insulation will continue to deliver its thermal performance for the remaining life of the building. Because of this, insulating buildings (new and old) is considered the basic cornerstone of achieving energy efficiency in buildings.

It is the most financially attractive of all energy efficiency and renewable energy measures to reduce energy waste and greenhouse gas emissions from buildings.

Research by the international consulting firm McKinsey and Company – ‘A cost curve for greenhouse gas reduction’ Nov 2005 found that ‘Almost a quarter of possible emissions reductions would result from measures (such as better insulation in buildings that carry no net lifecycle cost, in fact they come free of charge)’.

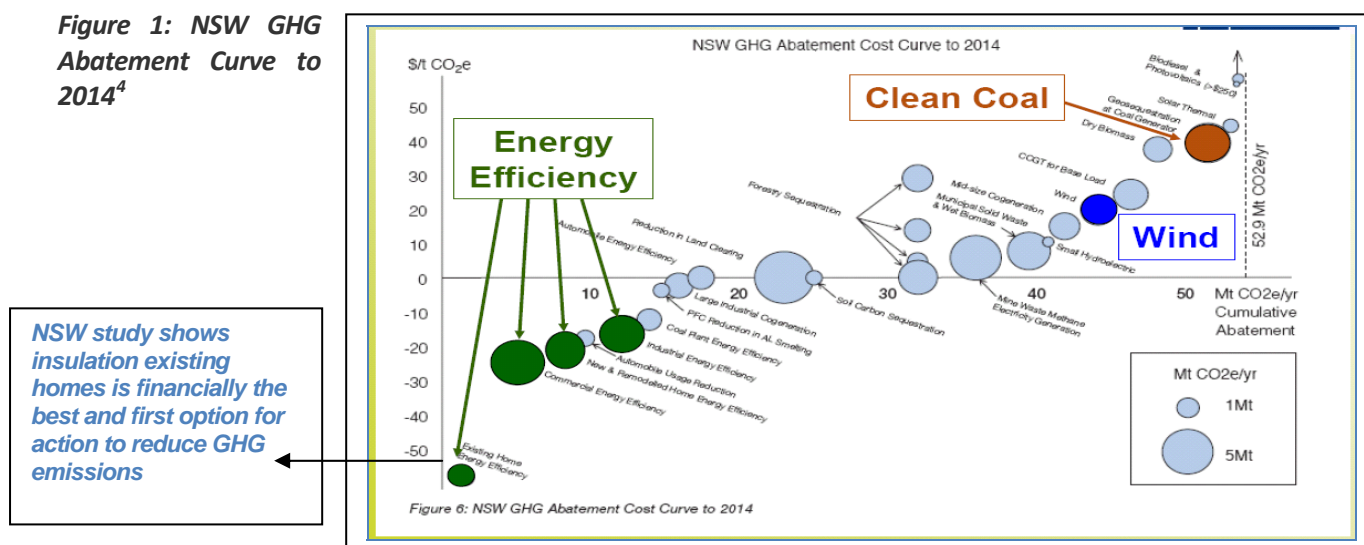
Buildings in general have long lives. Residential buildings have an estimated life span in excess of 70 years whereas commercial buildings are estimated to have a duration of around 45 years. Each year new buildings contribute about 2% to the existing building stock. Once built, any major change to a building is often not cost effective. Most energy efficiency improvements, and particularly ceiling insulation, are clear exceptions to this rule of thumb. Many studies both internationally and locally show very similar findings for undertaking building energy efficiency improvements.

These improvements are characterized by:

- a low investment cost,
- short term positive investment returns
- are mostly achieved through proven existing technology
- can be implemented immediately resulting in immediate energy and emissions savings
- in many cases have little or no maintenance costs for the remaining life of the building

Figure 1 below gives an analysis of the options available for NSW to reduce greenhouse gas emissions. The information presented on the chart shows comparative costs and relative reduction potential of each option. Insulating existing homes is the most financially attractive of options considered. This chart is very similar in findings to other local and international studies such as those done by consultants McKinsey & Co mentioned previously.

**Figure 1: NSW GHG Abatement Curve to 2014<sup>4</sup>**



#### 4. Benefits of insulation to the householder

The financial return from installing insulation into existing buildings can be assessed on several levels, each demonstrating significant benefit.

In 2007, ICANZ commissioned Deloitte Insight Economics<sup>5</sup> to complete an economic assessment of the benefits of retrofitting insulation into some, and all, of the uninsulated housing stock of Australia. The rate of energy savings

<sup>4</sup> Next Energy Pty Ltd Cost Curve for NSW GHG Abatement - NSW Greenhouse Office Nov 2004

<sup>5</sup> Deloitte Insight Economics An economic assessment of the benefits of retrofitting some, or all, of the remaining stock of uninsulated homes in Australia 2007



and GHG savings was deliberately factored in at a conservative rate to provide an extra level of rigor to the findings.

One of the scenarios evaluated was to insulate all of Australia's uninsulated housing stock over a seven-year period. In this scenario, energy savings to householders at current energy prices varied by climate and ranged from \$137pa in Queensland to \$376pa in the ACT. The weighted average of savings per home calculated by the Deloitte study was \$220 per household per annum.

Since the 2007 study energy prices have increased significantly in most States, and as a flow on from the CPRS, prices are predicted to increase again sharply over the next three years. Consequently, yearly savings per household quoted in this 2007 study from installing insulation would increase proportionately. For example the ABS Consumer Price Index, reported that during the past year household electricity costs rose across Australia by 15.8 percent in the 12 months to September 2009.

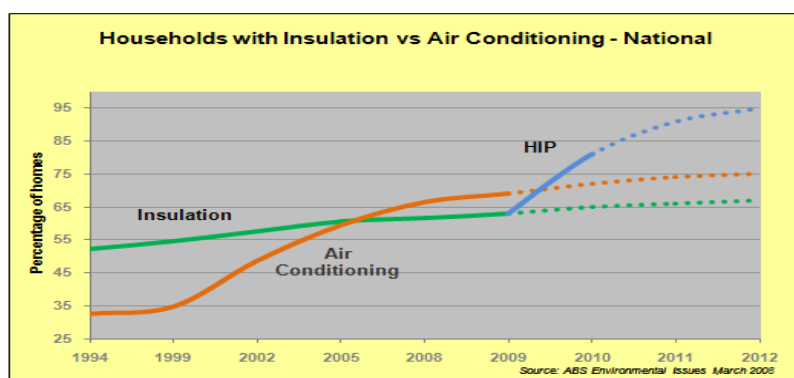
Payback for the investment in insulation was estimated to be between 4 to 8 years. This would improve if recalculated to current energy prices.

Once installed, the right insulation will perform and last the remaining life of the building and will require no maintenance costs. Considering the average existing home has a remaining life of around 40 years, insulation will pay for itself 5 to 10 times over.

The ABS series has also been tracking information on installed household energy consuming equipment<sup>6</sup>. Its 2009 findings report that more than three-quarters (77%) of Australian households had a heater, two-thirds (67%) had a cooler and more than half (56%) had a clothes dryer. Comfort rather than energy saving was the reason why nearly all (83%) householders had installed insulation in their homes - only 4% of households said they had installed insulation to save energy.

Figure 2 compares shows that the rate of increase in household air-conditioners dwarfs the rate of increase in insulation prior to EEHP, with consequent negative impacts on household energy efficiency (which would result in higher household energy bills), greenhouse gas emission and peak power demand. In this graph, ICANZ has forecast a scenario that shows the sharp lift in insulation as a result of the Federal Government's insulation program for existing homes resulting in a tempering of air-conditioning usage.

**Figure 2. Households with insulation v/s Air conditioning. Potential influence of HIP**



In Queensland (Figure 3), which contains some of the hottest climates in Australia, the picture is even more striking.

In 2005 more houses in Queensland with air-conditioning than with insulation and this trend was strengthening. Rising energy consumption from air conditioner usage is placing unsustainable stress on an already overloaded energy supply system. Nearly two-thirds of households (65%) had a cooler (i.e. air conditioner or evaporative cooler) in 2008 compared with 18% in 1994.<sup>7</sup> Queensland's contribution to national greenhouse gas emissions from air-conditioner use has already risen from 22 per cent in 1990 to 27 per cent in 1998, and is projected to reach 30 per cent by 2010 (ABS).

<sup>6</sup> ABS Australian Social Trends 4102 2009

<sup>7</sup> Environmental Issues: Energy Use and Conservation, Mar 2008 (cat. no. 4602.0.55.001)



Research conducted by BRANZ limited, (NZ) Victoria University of Wellington (NZ), and SERA Inc (USA) <sup>8</sup> investigated the non-energy financial benefits of improving the energy efficiency of homes (e.g. improvements to comfort, bill control, health, noise, maintenance and the environment). The research found that:

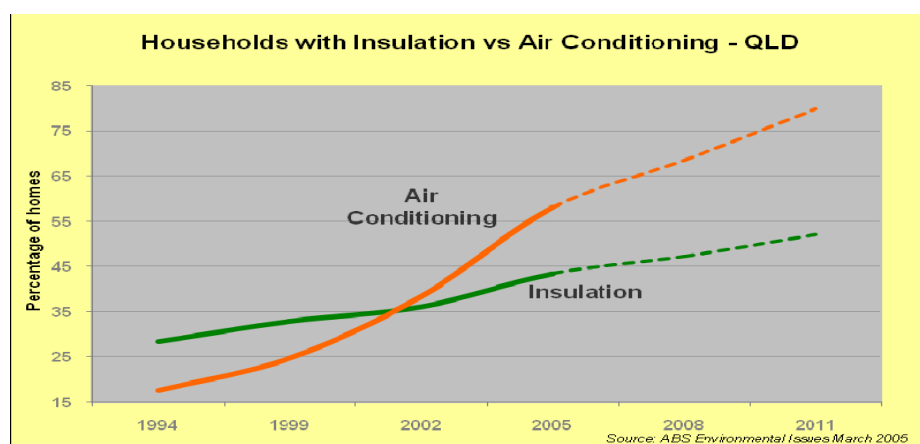
- Residential real estate markets assign to energy-efficient homes an incremental value that reflects the discounted value of annual fuel savings
- Benefits to landlords tend to be of similar magnitude as the energy savings to tenants.

However, there remains a level of ambivalence by landlords of the benefits for them and their tenants of improving insulation levels in rental properties.

The ABS *Peoples Views and Practices 2005* found that the two major reasons for not installing insulation are cost and not being the homeowner. Tenants are often the most economically vulnerable in the community.

A shortage of rental properties and rising rental returns have made many landlords complacent about the longer tenancy periods that can be achieved by more comfortable insulated homes, and the improved market value of insulated rental homes.

**Figure 3. Comparison between the number of households with insulation and the number of households with air-conditioning in Queensland**



## 5. Benefits to the taxpayer from retrofitting insulation

The retrofitting of insulation provides substantial and long-term benefits to the taxpayer and the nation.

The ICANZ Deloitte analysis on the effects of providing ceiling insulation to all uninsulated homes over a seven-year period estimated the following national discounted NPV benefits for the period 2008 – 2030:

- Total value of energy saved \$2,910m
- Improved GDP \$894m.
- Increase in Real Total Consumption (economic welfare) \$1,090m.
- Increased exports \$1,037m
- GHG avoided 25m tonnes
- Delayed infrastructure costs for energy \$250m

The benefits and savings to householders in this study are underestimated because the real energy prices were not assumed to rise appreciably. As householders have increasingly turned to more comfortable lifestyle through air-conditioning and full home heating, demand for peak power has rapidly increased. For every kW saved by installing ceiling insulation, the avoided generation and distribution costs are in the order of \$1500 to \$3000. In many cases, peak loading reductions alone produce greater savings than the cost of retrofitting insulation under the EEHP.

<sup>8</sup> 'The Value of Low Energy Technologies for Occupant and Landlord', by Albrecht Stoecklein (BRANZ Ltd., Judgeford, New Zealand), Yuan Zhao, Lauren Christie (Victoria University of Wellington, New Zealand), and Lisa Skumatz (SERA Inc. Colorado, USA) .that

## *Social health benefits*

Added to the economic benefits there are real added social benefits. There is a growing body of authoritative medical research concludes that improved comfort afforded occupants through effective home insulation directly contributes to their health and well being so reducing demand and costs to the health system, reducing absenteeism and improving work and education productivity. More comfortable, well-insulated homes have significant benefits for the sick and elderly.<sup>9</sup> The lack of effective insulation during extreme weather has also been identified as a key reason for higher mortality rates during these extremes<sup>10</sup>.

## *Employment*

There is no doubt EEHP has bolstered investment and employment in the insulation and other industries. In a short 10 months, the program has taken the insulation industry from a position of winding back operations to one of full production capacity, created new investment to increase capacity and preserved jobs.

Prior to the EEHP there were around 200 companies doing retrofit installation. ICANZ estimate that the EEHP has created in excess of over 6000 new jobs across Australia. Being a labour intensive service industry, most jobs in the insulation industry are downstream from manufacturing. We estimate that for every incremental manufacturing job created there has been 20-30 downstream jobs created nationally, in capital cities and regionally, across a range of occupations. Given this, while industry is at full manufacturing capacity, imports also have contributed to an increase in employment opportunities downstream of manufacturing.

## **6. Issues concerning the administration of the EEHP**

The EEHP is a large and bold program designed to take a quantum step to improve substantially and the energy efficiency of Australian households. Its scope is to have insulation professionally installed in all of the estimated 2.7m uninsulated housing stock in Australia over 34-month period. A program of this size and coverage for households has not previously been undertaken in Australia by either government or industry and its concept and progress has attracted the attention and interest of other countries who are considering introducing energy efficient measures for existing buildings.

## *Size and value of the rebate*

The Government's initial rebate range for EEHP of up to \$1600 was very consistent with the estimates used in the 2007 Deloitte Insight Economics macro economic assessment.

As with many energy efficiency products and services, long standing market failures have been identified that limit the potential uptake of products such as insulation. Some of these include split incentives – for example between landlord and tenant, information barriers – insufficient and simplified information readily available to weigh up the full cost/benefits of energy efficiency measure, and access to capital to fund the up-front investment. This is particularly true for low-income families. There is also a range of many other identified barriers.

Over the past 30 years, there has been various and regular subsidies for ceiling insulation offered to householders by State governments. These have had a value of between \$300 and \$500 and have had limited take-up. Insulation companies have continued to offer a range of generous incentives and spent millions of dollars in industry marketing campaigns over decades.

<sup>9</sup>

- Wellington School of Medicine, University of Otago Healthy Homes project - Housing and Health Research Program,
- French Department of Environmental Health's - Institute of Public Health Surveillance
- BRANZ Ltd, Victoria University of Wellington, New Zealand, SERA Inc. 'The Value of Low Energy Technologies for Occupant and Landlord'.
- Harvard University School of Public Health – Annual Benefits from Increased Residential Insulation Levels in U.S. Existing Homes 2002 and 2004

<sup>10</sup>

- Wellington School of Medicine, University of Otago Healthy Homes project - Housing and Health Research Program,
- French Department of Environmental Health's - Institute of Public Health Surveillance
- BRANZ Ltd, Victoria University of Wellington, New Zealand, SERA Inc. 'The Value of Low Energy Technologies for Occupant and Landlord'.
- Harvard University School of Public Health – Annual Benefits from Increased Residential Insulation Levels in U.S. Existing Homes 2002 and 2004

Industry has also participated in active promotions by governments through the provision of independent information on the benefits of insulation to entice homeowners and landlords to insulate their properties. Despite this, millions of Australian buildings remain uninsulated and more are poorly insulated. For manufacturers, returns or pay back on expensive consumer based advertising to convince those not already insulated to insulate has proved to be limited.

Prior to the introduction of EEHP, the uptake of ceiling insulation into existing homes was estimated to be around 65,000 – 70,000 homes per annum.

As part of ICANZ Deloitte study in 2007, a scenario also evaluated the benefits of a ceiling insulation if the Government offered a \$500 rebate over 3 years. At that time, using ABS data (above) we estimated the uninsulated housing stock to be 2.8m dwellings.

Based on previous experience it was our view that a \$500 subsidy over 3 years could achieve a 28% uptake. This also included the assumption that 40% of householders would purchase and self install the insulation making it easier for householders to fund the difference in cost between the purchase price of insulation and the rebate. In 2007, we also estimated that an average home would cost between \$1200 and \$1500 to have insulation professionally installed.

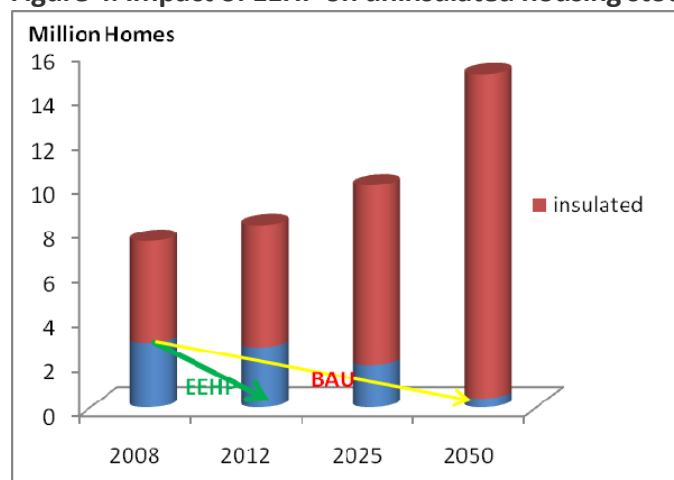
This estimate was based on the cost of installing glasswool insulation. To be inclusive of other insulation products and house sizes, the EEHP rebate needed to be pitched a little higher than the above range.

This price spread of \$1200 - \$1500 also accounts for other factors including a larger than normal home, difficult ceiling access, major obstructions within the ceiling space (ducting etc) that would extend the labour time considerably, and distance to travel to and from the home.

Based on our industry experience and the Deloitte study, we are adamant that in order for the government to achieve a high initial take up, and the objectives of creating jobs and insulating all uninsulated housing stock, a rebate of up to \$1600 was necessary to get full participation.

Figures 4 below shows the dramatic impact EEHP will have if it achieves its objective of insulating all uninsulated homes by 2011, compared to the business as usual trend of insulating 60,000 to 70,000 homes per annum. As the benefits resulting from insulation commence immediately, all household and community benefits, savings and GHG emission reductions will have been permanently brought forward to YE 2011.

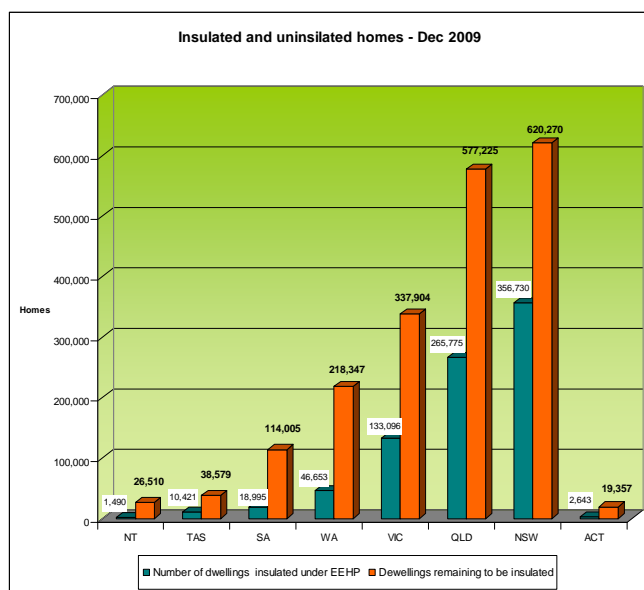
**Figure 4. Impact of EEHP on uninsulated housing stock**



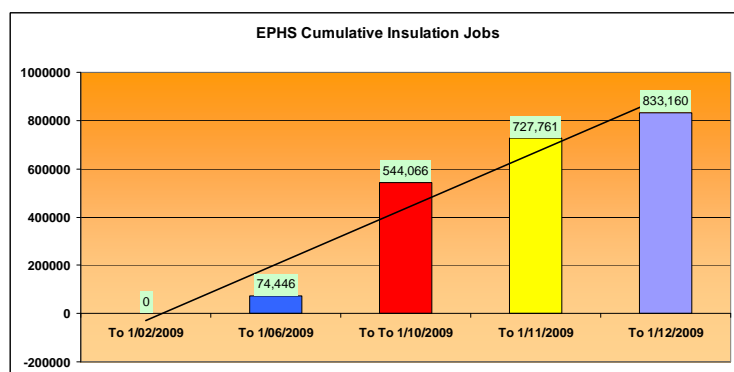
Given that such an extensive program had not previously been undertaken, the guidelines and administration for the EEHP, by necessity, started from clean slate and, in response to emergent issues, have continued to be revised and developed during the past 10 months.

As Figure 5 and Figure 6 illustrate, while demand and installations have rapidly increased, there remains a large and significant number of homes without effective insulation.

**Figure 5. Insulated and uninsulated home - Dec 2009**



**Figure 6 Cumulative insulation installations July 09 to December 09**



### *Industry regulation and standards*

In rolling out the EEHP program to contractors and installers, the program has introduced higher standards than that had existed previously for insulation installers in the existing homes market.

This market segment was in effect unregulated. Work in this market was considered of small scale and value, and as such, anyone could become employed with no experience. Prior to the EEHP, contractors and installers were not required to have any of the current EEHP prerequisites such as registration, OH&S certificates or training. Unlike the requirements for new building construction (covered by the Building Code of Australia), there were no mandatory minimum product performance levels, product standards, nor had there been requirements to install insulation to the existing Australian Insulation Installation Standards. In this environment (prior to EEHP) some loose practices occurred.

### *Consultation with industry*

During February, ICANZ participated in government consultation along with other industry bodies regarding the development of detailed guidelines for products, suppliers, contractors and installers. This consultation began on the day the EEHP was announced. The Administrators have made it clear that the program is under continual development and practical changes will be made if these improve the operation of the project. During the early stages, it was agreed the current Australian Standards for product and installation would be prerequisites. It was obvious that the scale of this program would generate considerable installation work and that this would attract new entrants into the insulation industry. Training would be a key requirement, which would need to be developed and implemented.

Since that first meeting, the administrators have initiated a series of working groups of industry and government to develop fully the requirements of the program. These work group meetings included detailed discussions and written submissions on installation and best practice OH&S guidelines. To the best of our knowledge, all recommendations ICANZ has made on these issues have been carefully considered – along with other views – and most have been adopted.

### *Regulation and standards*

The conditions and Standards now in place for the EEHP are at a higher standard than those required under the BCA for new construction. As the program continues these requirements will continue to be refined and improved through the structure for government and industry consultation that is now in place. It is our hope, and we believe this sentiment is shared across the insulation industry, that the framework now established by the EEHP will continue beyond the life of this program for all insulation work.

### *Ongoing administration and development*

As with the Guidelines, an effective approach to administering the EEHP needed to be established and developed. This has been done in concert with industry from the day the program was announced. It is ICANZ view that DEWHA has made outstanding progress, much of which was green field developments covering new untested grounds.

In addition to establishing basic installer registration, training and product standards mentioned above, the program has introduced excellent payment facilities for reimbursing installers promptly so as not to impose a cash flow restriction on the rapid expansion of the program. Now well established also, are very regular update bulletins with facts, updates and reminders for installers are been extremely useful in keeping all industry sectors informed as do the Helpline for installers and householders.

The ongoing development of the program will require input and co-operation from representatives of the insulation and allied industries. Whereas most elements of the program have had unanimous support from industry, from time to time there were divergent views that required the Administrators to make a judgement call and keep the programs moving and developing.

As the program progressed and participation grew rapidly, issues emerged from work completed that required some aspects of guidelines to be revisited. Issues such as on-site quoting, two quotes, training coverage, installation and safety requirements have all required some ongoing review and modification. This review process was done in consultation with relevant program participants; and where needed, corrective action has been timely.

With the benefit of hindsight, an unfortunate outcome, is that in some cases, the development and review process has been disruptive.

### *Production and distribution capacity*

Prior to the announcement of the program, industry was contacted to provide an estimation of the available capacity of the industry. Our original estimate was that we could handle the volume locally if spread out across the 34 months.

However, the announcement of the program's size and duration, and the rapid take-up rate caught the insulation industry by surprise and short of appropriate people, product and distribution capabilities.

The program required a very substantial assessment and realignment of production capacity to gear up to service the large increase in demand that would eventuate. Similar resource issues were faced in all aspects of the distribution and installation.

These capabilities remained under stress for the six months following the announcement date. Ideally, government and industry may have managed the early demand better if the timeframe had been taken over 4 or 5 years rather than compressed to 34 months. However, with more than 833,000 homes now insulated (progress to Dec. 10 2009), the outcomes are a testament to the cooperative approach between industry and government.

*Industry capacity and imported products*

The initial uptake in demand was sooner and significantly higher than that expected by either industry or government.

At the current run rate of over 5000 completions a day, the targeted total completions will be reached in advance of the program's official life. At this high daily delivery rate, there was no prospect of local manufacturers having the installed capacity to satisfy total demand. Imports, in addition to those already occurring prior to the EEHP, have been necessary to supplement supply and meet the demand generated. Without imports, many installation jobs would be delayed. Given that most insulation jobs are downstream of manufacturing, imports help to stimulate jobs by filling the gap in supply and enabling the industry to meet installation demand.

The import statistics specifically on insulation are protected and not available to the program Administrator or local industry. New channels of distribution have now also been established to supply product to insulation contractors and householders. Import agents have established themselves and sell containers of product directly to installers and some larger installers are directly importing product from overseas sources. As such, it is not possible at this stage to get an accurate assessment of the volume, value, origin or destination of imported product. What is known is the vast majority of imported product is glasswool and there are also small quantities of cellulose fibre, and other products imported.

Imports have created job opportunities by increasing supply of available product to be installed. In terms of total jobs employed in insulation, only small percentages are involved in the actual manufacturing of the product. The vast majority of employment is created downstream the production facilities, in transport, warehousing, delivery, quoting, installing, supervising and administration. As a rough guide, for every job in manufacturing, 20 - 30 are required downstream.

However, whilst the EEHP is good for jobs downstream while it is running, for local manufacturing imports are now emerging as a serious issue.

Any increased levels of imports are the direct result of the extremely limited timeframe and the popularity of the rebate, which has resulted in demand exceeding local supply.

As local manufacturers with significant and long-term commitments in Australia, we would prefer to see a lower incidence of imported product and more even and sustained levels of demand over an extended timeframe.

While there has always been a level of imported product, the high level of current demand will end at the conclusion this program. We can expect that the large uninsulated homes market will be satisfied, and that many downstream jobs will also be shed. Future local manufacturing jobs and the justification for further investment in manufacturing capacity is also at risk.

In order to fulfil higher levels of demand through supplementary imports, major insulation providers are typically carrying three months of inventory (in transit from point of manufacture origin to Australia). Any material change in rebate structure or programme termination would result in the medium term closure of local factories while such inventory was sold into existing channels.

ICANZ believes this could be addressed by extending the rebate period.

An extended rebate period would alleviate pressure for imports and better enable local manufacturing to meet the remaining demand of the program, provide a stronger more sustained market base for industry investment, and medium and long-term growth prospects for the insulation industry. It would support more sustained manufacturing investment and jobs growth over a longer period of time.

However, in other aspects of the program, imported products have not had a negative effect. We have seen no substantial evidence that imported products have increased prices. Local manufacturers of glasswool have not increased their prices to their customer base and average prices throughout the entire program have remained stable.

### *Imported products and Australian Standards*

Local manufacturers of glasswool are the largest suppliers of product to the EEHP. They also have substituted their glasswool supplies with imported product, mainly from affiliated major companies. A prerequisite for all products used in EEHP is that they comply fully with the Australian product standard AS/NZS4859.1.

Local glasswool manufacturers that are importing products have taken the necessary steps to ensure all products are tested before shipment, and meet all the required Standards of EEHP.

Amongst other requirements, this Standard specifies that thermal testing must be conducted by a recognised laboratory and that packaging provides extensive product labelling information for reference by installers and consumers. During the course of the program, local manufacturers have found instances of imported products that have not met these requirements and these have been brought to the attention of the Administrator.

At present, an additional protocol for auditing and verifying imported and local product claims is being developed by industry and government. As part of this, also under consideration is the development of a website listing all approved products that have been verified to meet standards for reference use by manufacturers, installers and householders.

## **7. Extending EEHP program**

### *Retrofitting insulation to walls and floors, fitting draft stoppers and window treatments*

As of this time, ICANZ has not done a comparative cost benefit analysis of these energy efficiency retrofit options. All options would improve the energy efficiency of the housing envelope and would have varying levels of durable performance. Intuitively all options should have short positive payback periods.

Of all options listed, retrofitting wall insulation has potentially the most significant impact on reducing heating and cooling costs of a home.

Retrofitting wall insulation is an established practice, occurring on a relatively small scale and should be developed further. ICANZ would welcome the opportunity to work with Government on this project. However, retrofitting of wall insulation should only proceed after strict standards and a licensing system are developed by the industry and government along similar lines to the UK Government's Cavity Wall program.

### *Retrofitting insulation for small to medium businesses*

ICANZ has recently participated in council projects to evaluate the current level of insulation in buildings occupied by small to medium businesses. The initial data collected via questionnaire from businesses showed a high level of uninsulated premises.

However, contractors encountered major difficulties in providing effective solutions for these businesses. Most premises had small areas needing insulating and access to these area was very often difficult. Many had suspended ceilings with ceiling spaces filled with air-conditioning ducting and suspension wires. Access to buildings was commonly limited to outside business hours. Many premises had extensive glass frontages and high customer traffic, which substantially reduces the benefits of insulation. This market has potential and needs further development, but it would have a far lower average cost benefit and payback period than does retrofitting home ceiling insulation.

## **8. Non-compliance with EEHP program standards and requirements**

There is no doubt there have been abuses of the program with regard to pricing, product and installation.

This is not unexpected in a new program of this size nor is it less common in ordinary day-to-day business. To the best of our knowledge, the rate of abuse is minor given the size of the program. As at Thursday 10<sup>th</sup> December,



over 833,000 homes had been insulated and in all probability, the vast majority of households are grateful and satisfied by the program.

### *Important roles of improved information and auditing*

All businesses and installers participating were given advance notice at the commencement of the program that extensive auditing would be introduced.

The program administrators now have a solid base of information to conduct detailed desktop audits on all recorded aspects of the program and participating businesses and installers.

On-site audit inspections are now underway and a comprehensive auditing program is now established. Although ICANZ estimates that abuses form a very small percentage of the overall program, ICANZ strongly supports rigorous following up of any reported and audited abuses. Those involved need to be counselled and if judged necessary, brought to account and dealt with as deemed appropriate.

Ongoing campaigns conducted by the media and the Federal Opposition have played an important role by bringing incidents, particularly repeated incidents, to the attention of industry, the program's administrators and to the general public. We believe the householder is now more aware of their responsibilities having more information available through the media, the websites of EEHP and product suppliers to make a more informed choice. The reintroduction of a mandatory on-site inspection, a reduced rebate to \$1200 and the need for two separate quotes will also help reduce profiteering.

However, it is our strong view that nearly all reported OH&S and fire issues are results of installers either not being aware of or not following the Standards and Guidelines required from the beginning of EEHP. This is also the case with issues relating to pricing abuses.

### *Fire and insulation*

Nearly all materials in houses and roof spaces are combustible.

Fires involving insulation and downlights have been an issue of concern for the industry for some time. In response, ICANZ members' products offer the added security of having been tested to Australian Standard 1530.1. This means they are deemed a Non Combustible building material.

Initial discussions with fire authorities around the country indicate that where glasswool was an insulation material involved in a fire, it did not burn or contribute to the spread of the fire. In all cases, we believe that human error, and not following the required Australian insulation installation Standards was a primary contributing cause to the fire starting.

ICANZ believes that all insulation products should either meet the 1530.1 Standard or where they do not meet this standard, in addition to the clearance space requirement, a secure barrier around the downlights and other heat generating appliances be required. This has been adopted as a requirement of the EEHP.

## **9. Managing electrocution risks**

ICANZ supports rigorous OH&S training requirements, which include education regarding the mitigation of electrocution risk.

The lessons of these tragic incidents have resonated through the industry. Unfortunately, even among trained and experienced trades people, and electricians, electrocutions occur. Naturally, ICANZ supports a robust level of training for all insulation installers to be aware and be prepared for the requirements and potential risks of installing insulation. However, ICANZ does not support the call for an electrician to attend every job to do a preliminary safety inspection.

We submit that in dealing with this issue, common sense must also prevail. Generally, insulation batts do not create electrocution risks and experienced insulation installers know what to do and have managed this safely over the years.

It is a very unfortunate reality that from time to time accidents involving electrocution of building workers occurs. The very unfortunate reality is that experience, training, administration and legislation can only hope to educate and improve practices to a point where risk is absolutely minimised. It cannot prescribe away human error.

## Conclusions

1. Given that this is the first time such a program has been undertaken on such a scale, and that already over 833,000 (progress to 10 Dec. 2009) homes have been insulated, ICANZ believes the program is highly successful.
2. Reducing the rebate any further below \$1200 would result in a much lower take-up rate and probable failure of the program.
3. The industry is now geared up to maximum capacity. Reducing the rebate below \$1200 or abruptly ending the EEHP altogether would create significant industry losses due to the substantial investment made by ICANZ members and others in the insulation industry to meet this unprecedented demand.
4. To date, both industry and the public have been given inadequate notice of programme changes and we strongly advocate that any programme changes be accompanied with a three month noticed period.
5. Extensive training, OH&S and installation requirements, for insulation have greatly improved under the EEHP and are now in place and working effectively.
6. By necessity, 'learning on the job' was required at the introduction of the EEHP. As issues have emerged, both the government and the industry have responded responsibly and successfully.
7. Going forward, the most sensible approach would be to focus more resources on ensuring compliance to the guidelines that currently exist rather than introducing more layers of administration.
8. The EEHP is a very large program and its delivery is highly decentralised. It is therefore unrealistic to aim to monitor actual quoting or installation. The main administration tools available are comprehensive, and these are supported by clear program guidelines.
9. There has been much confusion between the responsibility of the government, manufacturers and installers.
10. General and sweeping criticisms of the program based on individual mistakes or neglect have been unhelpful and confusing, especially where it is clear that individual suppliers or installers have not complied with the basic requirements of the program or not acted responsibly. These installers represent a very small proportion of the program, and robust programs of detailed auditing with strong corrective action are warranted deterrents.
11. Ceiling fires and electrocution occurred prior to the EEHP. The increase in number of ceiling fires and electrocution are a result of the significant increase in the number of jobs undertaken.
12. Rigorous training, administration and legislation are vital in reducing risk and ensuring compliance, however, they will not prescribe away human error or negligence.
13. As with all purchases concerning home improvements, householders also have some responsibility in ensuring that they make informed purchasing decisions, and follow the guidelines provided by government and industry. Given that householders are required to sign off on the installation, this responsibility includes a basic awareness of the size (square metres) of their homes in order to ensure quotes are reasonable.
14. The high level of current demand will end at the conclusion of this program. This will put at risk future manufacturing jobs and the justification for further investment in manufacturing capacity.
15. Going forward a more sensible approach is to alleviate demand and import pressure by extending the rebate period.

## Recommendations

1. The EEHP continue until the all-possible uninsulated homes are insulated.
2. The rebate remains at \$1200 for the duration of the program.
3. The rebate period is extended to four or five years.
4. In reporting its findings the Senate Inquiry ensures that:
  - a. A clear distinction is made between manufacturers, installers and administrators
  - b. When reporting electrocution accidents and fire incidents a clear distinction is made between human error, accidents and negligence
  - c. When reporting on fire incidents details concerning the insulation materials involved, installer error or non-compliance with standards, and what if any insulation material contributed to the spread of the fire, are provided.