

As a manufacturer of high performance insulation products I've been watching the problems unfold in Australia with regards to the insulation rebate program.

Like the solar incentive programs here in the US in the 80's, the intent was good but lacked a plan and many people were taken advantage of.

Similarly, the AU government is to be commended for wanting to reduce energy across the nation however a well thought out plan is needed to insure not only the end user is getting a benefit, but also your government for the millions that are going out in the form of rebates.

Some facts about insulation

First, some history:

When man first came to the US they built in the frigid Northeast where winter temps can frequently get below zero F...with wind. I know, I grew up in that climate. To reduce the amount of heat loss (chop less wood, haul less coal), "insulation" was placed above the ceiling to "R"esist heat loss.

This "insulation" was old clothes, rages, wood chips, straw, cow dung, old newspapers (cellulose), just about anything that would keep the house warmer. When electricity arrived along with knob and tube wiring, homes were burning down from "insulation" that was flammable. Shortly thereafter, the Germans pioneered and patented a spun fiber out of glass that was non flammable, reduced heat loss and soon became code in all buildings. Currently, a minimum of 5.5 inches of fiberglass (R-19), is code for the walls while a minimum of R-30 or R-42 (depending on the state), is the minimum level of insulation for attics.

How insulation is tested for R value:

In a laboratory test labeled "Guarded Hot Box", two identical boxes are used side by side with a test chamber in between them. The insulation which is to be tested is placed in the center chamber between the two boxes. The first box is heated up to 2x and maintained. A clock is started and when box #2 reaches 2x the resistance to heat flow is calculated and a R factor assigned. One huge anomaly in this test: There are 3 types of heat:

- Conduction
- Convection
- Radiation

In the guarded hot box only two of the three types of heat are being tested: convection and conduction. At no point in the guarded hot box test is there a source of infrared radiation (like the sun baking all the buildings during the winter in Australia), to show how ineffective bulk insulation is at resisting infrared heat. In fact, it's been proven for decades here in the desert of Phoenix that adding more attic insulation will make a home use MORE power for comfort cooling because it stores heat against the ceiling and re-emits for hours after the sun goes down. [Click here](#) to see a recent news story about a couple who added more attic insulation here in Phoenix. Two things happened immediately: The electric bill went up and the house got hotter. This news piece (and this email), should be forwarded to every person involved in the Home Insulation Rebate Program.

For the purpose of this awareness: **bulk insulation (fiberglass/cellulose/insulsafe), is primarily designed for and originally intended for keeping heat IN homes, not out.**

Desert Environments:

Glass is transparent to infrared heat. Ever stand behind a window when the sun is shining? Feel the heat coming through the glass? Now feel the glass, warm isn't it? This same thing happens on a much larger scale in the attic of a desert home. When it's cold you put a

sweater on. Do you wear a sweater in Townsville in January? No? Why not? You are paying people to do just that in millions of homes which will now be using MORE power than they did before adding more insulation.

HOW DID THIS HAPPEN?

Lobbyists for the insulation companies have hoodwinked builders, architects and governments into believing that insulation works in all homes in all climates and have codes to prove this across the planet.

YOU can make a difference by mandating tests in the University of Western Australia and only on full size homes so it is accurate. People don't live in test boxes, they live in full size homes. Test various reflective foils including [Thermal Control Membrane](#) (TCM), a new product manufactured in the US but soon to be manufactured in Townsville. TCM is not a foil and therefore does not pose a safety threat when in contact with electricity. TCM is multiple layers so it's impervious to performance degradation over time from dust like other single layer foil products. Finally, TCM can be installed with or without insulation and does not require staples or air spaces as it has the necessary air spaces built into it.

TCM is about to become code for the US Tropical Territories including Guam, Hawaii, Puerto Rico and the US Virgin Islands. We have been installing TCM in Hawaii in homes with no bulk insulation and the effects are immediate and long lasting. Homeowners are able to turn off the air conditioning and still live in comfort.

ATTIC VENTING

One mistake in the program is not realizing the importance of attic venting in a hot climate. Go to Google and type in "attic venting" and we are #1 in the world, have been for years. The combination of TCM and attic venting are returning reductions of a/c bills by 50% in many cases, above 30% in all homes.

If you would like more information please [click here](#).

Best regards,
Brad Lindsay, CEO Horizon Energy Systems
BPI Certified home inspector
LEED Certified building analyst
USGBC member and advisor
Manufacturer of high performance insulation products.
www.savenrg.com