

**Productivity Commission**  
**SUBMISSION COVER SHEET**  
(not for publication)  
**Inquiry into Energy Efficiency**

Please complete and submit this form with your submission to:

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Dr Neil Byron and Mr Mike Woods  
Commissioners  
Productivity Commission

[energy@pc.gov.au](mailto:energy@pc.gov.au)

30 June 2005

By email

Dear Dr Byron and Mr Woods

### **Supplementary submission on issues raised by Dr Williamson in Submission DR133**

In the limited time available, it is not possible to fully resolve all of the issues raised by Dr Williamson in his latest submission. In a number of areas, the disagreements relate to the relative weighting placed on different issues, and in others there is significant agreement. However, there are a number of specific issues raised in the submission that require response.

#### *Comments regarding Dr Soebarto's case study*

In the Williamson submission, Dr Soebarto disputes interpretations made in the ICANZ submission that installation of 'shrink-wrap' double glazing and draught proofing occurred in response to discomfort: rather that the shrink-wrap was installed as an experiment and that no additional draught-proofing was installed.

The following are quotes from Dr Soebarto's original paper (copy attached):

p.114 "According to the occupants the house is quite comfortable during the year. However in winter the house is rather too drafty and therefore they have since installed rubber seals around the doors to reduce air infiltration."

p.115 "To reduce heat loss through the glass, the owner has installed a sheet of 'shrink wrap' to create a double glazing effect."

These quotes seem consistent with the ICANZ interpretation.

It is also clear from the original paper that the limited periods of occupancy of the house contributed to the occupants' sense of satisfaction:

"The living space is usually occupied after seven in the evening"

"Is a house that seems to be warm and uncomfortable (based on the standardised human comfort range) truly uncomfortable for the user? When this result was shown to the occupants, they did not seem to feel that the house was warm as they were mostly out of the house during summer days. As soon as they got home they always opened the doors to let the warm air out. If the house was occupied all the time, however, the occupants may have had a different perception and the blinds may have been used to reduce the heat gain."

#### *Conservation versus energy efficiency*

On page 6 of submission 133, Dr Williamson comments:

"My initial submission #28 described in some detail various meanings that could be given to energy-efficiency in the context of buildings. While occupants in the case study houses did

indeed achieve energy conservation, suggestions that the occupants were not engaged in efficiency practices is ridiculous. For instance, if efficiency is expressed in physical thermodynamic terms as the ratio of satisfaction (output) and energy consumption (input) then each household achieved a high level of efficiency.”

Dr Williamson is accepting that conservation practices have occurred but is arguing that if a ‘physical’ definition of energy efficiency is applied, the outcome involves improved efficiency.

This statement further supports previous recommendations from ICANZ and Pears that the Williamson conclusion should be declared outside the Inquiry’s Terms of Reference. Not only is conservation acknowledged to be occurring, but also the Commission has clearly stated it is not looking at technical (or physical) efficiency: is considering ‘economic’ energy efficiency.

#### *The subjectivity and variability of comfort*

It is clear that comfort is a very complex and subjective issue, so discussions about what might lead to ‘adequate comfort’ are difficult.

ICANZ has taken the view that there are clear health reasons for not allowing dwellings to become extremely uncomfortable or to be expensive to keep comfortable. Further, approaches such as ASHRAE’s reflect the conditions under which most people feel comfortable, and indicate that, when uncomfortable, increasing numbers of people will install and use airconditioning and heating systems with significant environmental and cost implications. Given the high cost of later changes to (and in many cases, irreversibility of) decisions made during design and construction, it was then concluded that some constraints need to be applied to new dwellings to protect both future occupants and even the first occupants, as well as society, from the consequences of construction of uncomfortable and potentially unhealthy housing.

In submission 133 Dr Williamson proposes another approach (p.8):

“A meaningful method of Mandatory Disclosure of Energy Performance of Residential Buildings would do a lot to ensure prospective future owners/tenants are made aware of the likely implications of occupancy.”

This position differs from the Commission’s view in its Draft Report. But it is worth exploring. It seems that Dr Williamson is proposing that if all future buyers of a dwelling could be fully informed about its energy and comfort performance, then they would be able to factor this into the price they were prepared to pay. It follows that when someone is designing and building a house, they would appropriately consider the possible future impacts on resale price of the disclosure of energy performance, and would respond accordingly.

ICANZ, BCSE and many others have supported the introduction of an effective energy disclosure scheme precisely because it will improve the operation of the market, particularly for existing homes. However, when the complexity of decision-making, long timeframes and costs of building modifications are balanced against the generally positive benefits or negligible costs of simply getting things right at the start, it is far more cost-effective for society and most individuals to apply energy regulations at time of construction. As has been pointed out previously, special cases can be considered under the ‘expert’ path offered within the Australian Building Code.