



## Australian Building Codes Board



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Dear Dr Byron

Enclosed are three copies of the ABCB's response to the Commission's draft Report on Energy Efficiency. An electronic version has been forwarded to your office today.

The submission represents the collective view of the ABCB Board supported by input from the ABCB Office.

The report appears to be seeking both a nationally consistent approach and a pause on any more changes to the BCA. These two goals are mutually exclusive in reality, because the primary vehicle to achieve national consistency is to make changes incorporated into the Building Code of Australia. A moratorium of enhanced housing measures and measures for classes 5 to 9 buildings until BCA2007 will only encourage more State, Territory and possibly local government variations. It may also result in another 340 000 tonnes of greenhouse gas emissions in the first year rising to 1,200,000 tonnes in 2015. When we met with you, you said that it was not your intention to delay the ABCB processes, but to ensure that we took into account your report's views on the robustness of our analysis. We agree.

The comments on dwellings relate to criticisms of the Nationwide Energy Rating Scheme (NatHERS) and a claim that the BCA is based on the flawed NatHERS software. This is incorrect. The regulatory methodology and technical solutions have been developed and tested using fundamental architectural principles and formulae, expert opinion where necessary, current practices wherever possible and only limited use of computer modelling, most of which has been with software developed by the US Department of Energy. Only the final checking for the Verification Method was done using house Energy Rating Software.

The report could also be read to suggest that the economic analyses undertaken by the ABCB should have been more thorough.

The analysis for the energy efficiency project has been more extensive than any other project undertaken by the ABCB. The economic criteria for commercial buildings were established in consultation with industry and approved by ORR early in the

project. Sensitivity analyses have been carried out with different criteria including industry supplied glazing and insulation costs. All costs used are pertinent to "a long term building owner". We also included very conservative regulatory and consultant costs, all approved by ORR.

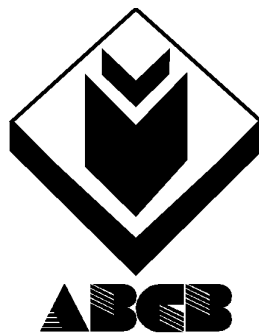
Details of economic reports and consultancies involving costing are at (Attachment A).

Finally, with the focus on "a long term building owner", many costs and benefits that would further support the introduction of the measures have not been included, such as the benefits of greenhouse emission reduction and the true cost of energy including infrastructure costs and avoidance of black-outs due to more reliance on air-conditioners.

I encourage you to take this response into account in finalising the Productivity Commission's Report.

Yours sincerely

Peter J Laver  
Chairman  
26 May 2005



**Productivity Commission  
Draft Report on Energy Efficiency**

**Chairman's Response**

**May 2005**

## **How to contact the ABCB**

Requests and inquiries concerning this response should be directed to:

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# ABCB's RESPONSE TO PRODUCTIVITY COMMISSION'S DRAFT REPORT ON ENERGY EFFICIENCY

## INTRODUCTION

This submission is made by the independent Chairman of the Australian Building Codes Board (ABCB) and represents his own views, as well as those of the ABCB Board.

### DRAFT RECOMMENDATION 11.1

*The Australian Building Codes Board should examine ways to reduce the scope for local governments to erode the uniformity of minimum energy efficiency standards for new houses.*

### ABCB RESPONSE

- The ABCB again acknowledges the Commission's desire that the erosion of nationally consistent energy efficiency provisions for houses by local governments be reduced.
- The State and Territory Governments, who are parties to the ABCB, have been reminded that their involvement is critical to the attainment of this objective.
- The interface with other authorities in each State and Territory is also critical to the attainment of this objective, particularly in those jurisdictions where energy efficiency is regulated by planning authorities rather than building authorities.
- The ABCB ,however, has no jurisdiction over local government. Also, in a number of States the Minister responsible for building regulation do not have responsibility for local government.

### DRAFT RECOMMENDATION 11.2

*National Framework for Energy Efficiency Stage One proposals (that are not directly affected by other recommendations) should be deferred until independent evaluations of existing energy efficiency programs have been undertaken. The evaluations should determine the effectiveness of these programs in promoting the uptake of cost-effective energy efficiency improvements.*

### ABCB RESPONSE

- While the ABCB has a role to play in the implementation of some aspects of NFEE Stage One, the ABCB's energy efficiency program was developed independently of NFEE. The ABCB's energy efficiency program should therefore not be affected by deferment of NFEE Stage One.

### **DRAFT RECOMMENDATION 7.3**

*New or more stringent energy efficiency standards for residential buildings should not be introduced until existing standards have been fully evaluated. The evaluation should be commissioned by the Australian Building Codes Board to:*

- *consider whether defining building standards in terms of simulated heating and cooling loads is an effective way to raise actual energy efficiency;*
- *investigate whether weaknesses in energy-rating software distort the housing market in favour of particular building designs that are not necessarily the most cost effective, particularly over the longer term as innovations are made in building design;*
- *evaluate costs and benefits in a way that takes account of the diverse preferences and financial circumstances of individual home buyers;*
- *assess how effectiveness and compliance costs differ between the deemed-to-satisfy and performance-based standards;*
- *analyse the distributional impacts of standards on different socioeconomic groups, including first-home buyers and less-affluent groups; and*
- *examine the process used to set the stringency of standards in the Building Code of Australia, including the impact of any increase in stringency by individual States and Territories.*

### **ABCB RESPONSE**

- The software used includes DOE2.1e, NatHERS, FirstRate, and BERS. The BCA housing provisions were developed using fundamental architectural principles, both thermal modelling software and expert opinion. In producing the BCA housing provisions, the ABCB has been mindful of the criticisms of NatHERS, hence the reason for using a variety of software.
- The ABCB is of the understanding that the AGO has led the development of the next generation of NatHERS i.e, AccuRate in consideration of the criticisms that software has previously attracted.
- The ABCB supports the use of software that model simulated energy load as a means of determining the relative energy efficiency of buildings. This methodology is also widely endorsed internationally, especially in the USA, where a number of such software tools have been developed.
- The BCA provisions provide qualitative Performance Requirements and prescriptive Deemed-to-Satisfy Provisions. Simulation software may be used as one means of achieving compliance with the Performance Requirements, in keeping with the performance-based philosophy of the BCA.
- With respect to the enhanced provisions for houses, the ABCB is currently in a public consultation stage on the provisions and is working to a Board timetable for implementation on 1 May 2006. Some States, such as SA and ACT, are likely to proceed

irrespective of whether the BCA changes take place and so this would result in further loss of national consistency. Detailed technical provisions and regulatory impact statements were published by the ABCB, and approved by ORR for release, in respect of these further energy efficiency measures for buildings.

- The Commission has noted that the enhanced housing provisions are scheduled for inclusion in the BCA in May 2006. However, the introduction of the enhanced housing provisions marks the completion of the original program of energy efficiency provisions for housing. The provisions that were introduced in January 2003 were intended as an interim step to allow industry to adjust to the energy efficiency requirements before the final provisions were introduced. The ABCB had intended to introduce the housing provisions proposed for May 2006 in one step. However, a two step approach was developed at the request of industry and some State and Territory Governments.
- The adoption of the enhanced housing provisions in May 2006 will improve the consistency of the energy efficiency provisions throughout the State and Territories.

## **DRAFT RECOMMENDATION 8.2**

*Energy efficiency standards for commercial buildings should not be introduced without a more thorough evaluation of the costs and benefits of such a policy and a comprehensive analysis of the other policy options. In such an evaluation, the Australian Building Codes Board should give greater consideration to:*

- *the sensitivity of regulatory impact statement estimates of cost savings to the assumptions used;*
- *the costs of introducing energy efficiency standards, including administration costs and compliance costs; and*
- *the effectiveness of standards in achieving higher actual energy efficiency.*

## **ABCB RESPONSE**

- In respect to the proposed BCA energy efficiency provisions for commercial buildings, the points made about the need for sensitivity analysis, compliance costs and the efficacy of the measures are valid areas for consideration and have been addressed in the ORR approved RIS on Class 5-9 buildings recently released.
  - The ABCB foresaw possible criticism and very early in the development of the BCA provisions for commercial buildings sought ORR agreement to the proposed life cycle analysis methodology and economic criteria. A number of reports were commissioned by the ABCB in order to investigate and obtain agreement on these issues.
- With respect to the new provisions for commercial buildings, the ABCB is currently in a public consultation stage on the provisions and is working to a Board timetable for implementation on 1 May 2006. Some States and Territories may proceed irrespective of whether the BCA changes take place and so would result in further loss of national consistency. Detailed technical provisions and regulatory impact statements were published by the ABCB, and approved by ORR for release, in respect of these provisions.
- The Regulation Impact Statements prepared by the ABCB with respect to the BCA energy efficiency provisions demonstrate a positive benefit/cost ratio. This is exclusive of the less tangible environmental and community benefits. The benefits may be further understated because the RIS' only examine the avoidable cost of energy and do not consider the possible reduction in energy-related infrastructure.
- There is an urgency to the introduction of the BCA's energy efficiency provision because of immediate need to address peak energy demand in many areas of Australia.



### ECONOMIC REPORTS AND CONSULTANCIES INVOLVING COSTING

- The reports have been made available on the ABCB website and include:
  - *Atech Report on the Economic Analysis methodology and energy costs*
  - Development of Energy Provisions for Windows in Non-residential Commercial Buildings (*stringency based on economic criteria*)
  - Economic Analysis of Energy Provisions for Base Building Fabric Elements of Air-conditioned Office Spaces (*economic analyses on the benefits of improving insulation and glazing performance*)
  - Assessment of Energy Efficiency Measures, BCA Vol1:Part J4 - Services, Hot Water Supply for Class 2,3 and 4 Buildings - measures for DHW
  - Power Factor Correction Evaluation
  - Energy Performance Assessment of HVAC Equipment for Class 2,3 and 4 Buildings (*air conditioning equipment*)
  - EMET Buildings\_Report(2002).doc (*compares actual energy use with energy use estimated by modelling*)
  - Performance Standards of HVAC Equipment