

Ms Jodie Pipkorn
National Energy Productivity Plan Secretariat
Department of the Environment and Energy
Email: NEPPSecretariat@environment.gov.au

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Re: Trajectory for Low Energy Homes – Stage 3 Consultation Questions

Dear Ms Pipkorn

The Energy Efficiency Council (EEC) welcomes the opportunity to provide input into the Low Energy Homes Trajectory work program. The EEC is the peak body for energy efficiency, demand management and cogeneration in Australia. Our members include energy efficiency providers, independent experts and various levels of government.

The EEC strongly supports strengthening the energy efficiency standards for commercial and residential buildings to the level that delivers the greatest benefit to consumers, taking into account reduced energy bills, health outcomes, environmental outcomes and improvements to the security and affordability of the energy system.

Australia has a large stock of existing buildings, and much of the EEC's work focuses on retrofitting existing buildings. However, improving the standard of buildings when they are built or undergo major refits is the cheapest and most effective way to ensure that buildings are more productive, and avoids poor design being 'locked-in' for decades. Building standards are essential because builders, sub-contractors and some developers face strong incentives to cut corners in the construction phase, while building occupants pay the long-term costs of running a building. As energy efficiency is a 'hidden' feature of a building, almost all developed countries have minimum standards to protect consumers.

The EEC believes that it is essential to raise standards and compliance for residential buildings, and commends the efforts by the Australian Sustainable Built Environment Council (ASBEC) to determine a pathway to improve standards over time. Our detailed responses to the Stage 3 Consultation questions are set out in the attached submission.

The EEC looks forward to continuing to work with the Commonwealth Government to develop stronger standards for residential buildings. If you have any questions on these comments please contact Ian Swain on ian.swain@eec.org.au.

Yours sincerely



Rob Murray-Leach
Head of Policy



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**Energy Efficiency Council Response to
Trajectory for Low Energy Homes
Stage 3 Consultation Questions**

Trajectory for Low Energy Homes: Stage 3 Questions3

Q1. Which Performance Metric/s do you think would be most appropriate for the NCC? Are there others that should also be considered?

The National Construction Code (NCC) energy efficiency provisions have traditionally focussed on addressing three key issues: reducing households' energy bills; ameliorating network impacts; and reducing greenhouse gas emissions. The EEC recommends that these critical goals should be retained and accompanied by an additional performance requirement - comfort and resilience to extremes in weather (both hot and cold).

The EEC does not have a view at this time on which performance metrics should be selected to ensure the delivery of these goals. Once analysis on the strengths and weaknesses of different performance metrics has been completed, the EEC will provide a comment on the suitability of metrics such as different heating and cooling caps.

Q2. What components do you think should be included in the scope for the NCC? For example, should renewable energy be included?

The NCC should include minimum thermal performance requirements for the building shell, which can't be traded off with the performance of appliance efficiency. This relates to the fact that building fabric tends to be in place for many decades, while appliances turn over more frequently. Above this level of minimum performance, some level of trade-off may be permissible.

The NCC currently complements requirements for building fabric with separate requirements for lighting and hot water. Additional requirements should be added for heating and cooling systems, and requirements should be considered for other categories major energy-using equipment. In the future, it might be possible to move towards a "whole-of-house" standard that retains minimum standards for building fabric, but allows trade-off between some elements of building fabric and appliances.

The EEC does not have a position on the inclusion of renewable energy in the NCC. However, the energy efficiency of a building is entirely defined by on-site elements, whereas low-emissions generation can be provided by on-site or off-site generation. Therefore, the NCC must include minimum elements for on-site energy efficiency that cannot be compromised by the inclusion of on-site renewable generation.

Q3. How do you think the NCC could be best verified and strengthened?

Verification and strengthening of the NCC energy efficiency provisions depends on adequate coordination and resourcing to undertake effective economic modelling, software validation and on-ground compliance. Substantial confidence in all three (interrelated) aspects is needed to establish stakeholder and political support for progressive code strengthening.

Q4. Do you think there should be a target for the sector and if so, what do you think it should be?

The NCC should have a level of stringency that delivers maximum benefits to consumers, taking into account the impact of energy efficiency on reducing energy bills, improving occupant health and delivering energy system benefits. The cost-effective level of energy efficiency will increase over time, as the costs of energy efficiency technologies and

construction and installation methods decrease. Therefore, the EEC strongly recommends the development of an indicative long-term pathway for the NCC, and commends ASBEC for its work on this issue.

The EEC notes that there is ample evidence that the standards for residential buildings should be tightened as soon as possible to deliver maximum benefits to consumers. For example,

- Pitt and Sherry (2012) estimated that zero emissions homes could be cost effective by 2020¹
- Climateworks (2013) calculated the optimum national setting to be equivalent to a NatHERS rating of 7.2.² If recalculated now this is likely to be at least 8 stars due to increases in grid-sourced energy costs and decreases in energy efficient building costs.

¹ Pitt&Sherry, 2012, *Pathway to 2020 for Increased Stringency in New Building Energy Efficiency Standards: Benefit Cost Analysis: 2016 Update for Residential Buildings*, Report Prepared for Commonwealth Department of Industry, Innovation and Science, Hobart. Available online from:
<http://nathers.gov.au/sites/prod.nathers/files/u20/Pathways%20update%20report%20-%20final.pdf>

²ClimateWorks Australia 2013, *Tracking Progress towards a Low Carbon Economy. Report 4 – Buildings*, ClimateWorks Australia, Melbourne. Available online from:
https://climateworks.com.au/sites/default/files/documents/publications/climateworks_trackingprogress_buildings_full_report_july2013_1.pdf