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NEPP Secretariat  
Energy Productivity Branch, Energy Division  
Department of the Environment and Energy  
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Dear Secretariat,

### **TRAJECTORY FOR LOW ENERGY BUILDINGS**

The Vinyl Council of Australia, particularly on behalf of its uPVC Window Alliance<sup>1</sup> members, is pleased to have the opportunity to consult on the context papers for the COAG Energy Council Residential and Commercial Building Trajectory Project. The Vinyl Council has around 100 member companies, many of which are local manufacturers and suppliers of building products such as pipe and conduit, cables, floorcoverings, windows and permanent formwork.

We are pleased to see recognition in the papers that there is first, a strong case for National Construction Code (NCC) adjustment in 2022, and every 3 years thereafter for Commercial buildings; and secondly, clear evidence that thermal efficiency requirements for Residential buildings could be increased in the NCC 2022 to deliver cost-effective improvements, with a trajectory thereafter towards 'zero energy and carbon ready homes'.

Homes being built today will be locking in greenhouse gas emissions for the next 50 years. There is therefore an imperative to prepare buildings being built today for a 'net zero' future. For this reason, we support the call for a 'zero energy and carbon ready Code' for homes.

The Department's analysis and assessment supports the findings and recommendations contained in the industry-led analysis in the ASBEC and Climate Works report [\*Built to Perform: An Industry Led Pathway to a Zero Carbon Ready Building Code\*](#).<sup>2</sup>

Providing clear trajectories for improving energy efficiency and performance of the Commercial and Residential construction sectors will deliver a level of certainty regarding future NCC changes that will enable industry to adapt and implement the changes required to deliver future, Code-compliant buildings. This approach would provide the certainty industries like ours – supplying thermally efficient uPVC windows and other building products - need to innovate and invest, so as to supply economically the products higher performing buildings need, and thereby support a rapid and least cost national transition to net zero.

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<sup>1</sup> The uPVC Window Alliance is an initiative of members of the Vinyl Council of Australia. Supported by leading manufacturers of uPVC window profiles for the Australian and New Zealand markets, window fabricators, glass and hardware suppliers, the uPVC Windows Alliance shares information and resources on uPVC windows so that specifiers, architects, designers and home-owners can make fully-informed decisions about which type of window to install.

<sup>2</sup> The Vinyl Council is a member of ASBEC and contributed a small amount of funding to the research behind this report.

The experience of other nations in implementing effective energy efficiency measures through building codes and market transition strategies shows the building product industry can respond relatively quickly. This has particularly been the case with the window industry.

*Built to Perform* and the NEPP Building Trajectory Project are clearly showing that cost-effective investment can be made today to deliver long term improvements in energy demand and greenhouse emissions in the residential sector. This includes improving windows in the home. While issues have been raised concerning the costings used for higher performing glazing in the NEPP Project's report, evidence in our sector is that the costs of higher performing window systems are already coming down.

We are, however, concerned that the Project and analysis refers to 'higher performing glazing' suggesting the focus is only on changing the glazing in windows. It is important to recognise that it is the window **system**, including the glazing, framing, closure and sealing, that makes a significant difference to thermal performance of the building. Window systems of the same size with identical Insulated Glass Units will perform quite differently depending on the frame material and the window style (awning, casement etc) and inherent sealing. It is therefore necessary to consider 'higher performing window systems' as measured by window U-values and Solar Heat Gain Coefficients, and encourage upgrading from high  $U_w$  value (low performing) window systems.

Verification methods should be based on robust, reliable window assessment calculators in order to encourage improved orientation and optimal sizing of windows along with other thermal energy efficiency outcomes. Australian homeowners should be able to continue to have good daylighting yet also achieve thermal comfort of their homes through appropriate window-to-wall ratios and use of higher performing windows.

In addition, we encourage consideration of air tightness testing requirements in the NCC for residential buildings to meet appropriate air tightness targets for new homes to go some way in verifying performance.

### **Renewable energy**

While the Trajectory Project Context Paper for residential suggests there could be cost effective benefits in adopting renewable energy for homes to reduce energy consumption, and we agree these should be considered, it is our view that mandatory energy efficiency targets should be met before the effect of renewable energy provision to a home is assessed. If the effect of installing renewable energy such as solar photovoltaics overrides improving energy efficiency of the building, there may be little incentive to address poorly built, leaky homes. This may have implications for energy demand on certain climatic condition days where high levels of heating or cooling demand are required to maintain comfort and renewable energy capacity is insufficient.

In other words, while not adverse to mandatory renewable energy provisions in the Code in due course, the energy efficiency performance requirements must take precedence in meeting an energy usage budget or be required to meet a specified major proportion of that budget.

## Summary

The Vinyl Council supports the Residential Report recommendations that:

- Thermal energy efficiency requirements should be increased in the NCC 2022 to at least 6.5 or 7 stars NatHERS depending on climate zone and an additional energy usage budget introduced.
- A trajectory towards 'zero energy and carbon ready homes' should be set to provide direction and industry certainty.
- Energy efficiency provisions should be updated in each triennial revision of the NCC where they deliver benefits for households and the community.

In addition, we encourage consideration be given by the Council to:

- Improving building sealing requirements and compliance in the NCC, while managing ventilation issues, and any cost-effective measures included as part of the RIS.
- Market transition strategies and incentive programs that might be adopted by states and territories to support the adaption of the building industry and aid the delivery of cost-effective technologies.
- Measures that improve existing homes including incentive programs and state and territory initiatives that encourage the take-up of home improvements such as higher performing window systems.

Yours sincerely



**Sophi MacMillan**  
Chief Executive