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21 May 2024

Climate Science & Adaptation Unit
Climate Change Authority
Ngunnawal Country, John Gorton Building,
King Edward Terrace, Parkes ACT 2600 Australia

By email: consultation@climatechangeauthority.gov.au

Dear Climate Science & Adaptation Unit

RE: Property Council of Australia submission on 2024 Issues paper: Targets, Pathways and Progress

The Property Council of Australia welcomes the opportunity to provide comments on the Climate Change Authority's 2024 Issues paper: *Targets, Pathways and Progress*.

The Climate Change Authority's role in providing independent advice to the Australian Government will be an input to shape the overarching design and approach to an economy-wide plan for achieving Australia's interim and 2050 emissions reduction targets. We are also pleased to contribute detailed feedback on the proposed approach to the development of a built environment Sectoral Pathway.

About us

The Property Council of Australia is the leading advocate for Australia's largest industry – property. Our industry represents 13% of Australia's GDP, employs 1.4 million Australians and generates $72 billion in tax revenues. Property Council members invest in, design, build and manage places that matter to Australians across all major built environment asset classes.

Australia's property industry leaders are world leaders in sustainability. They have a demonstrated commitment to ESG, topping indices like the Global Real Estate Sustainability Benchmark and the Dow Jones Sustainability Index for thirteen consecutive years. Most of our leading members have net zero goals by 2030 or before (Scopes 1 & 2), with several having reached it already at a fund level.

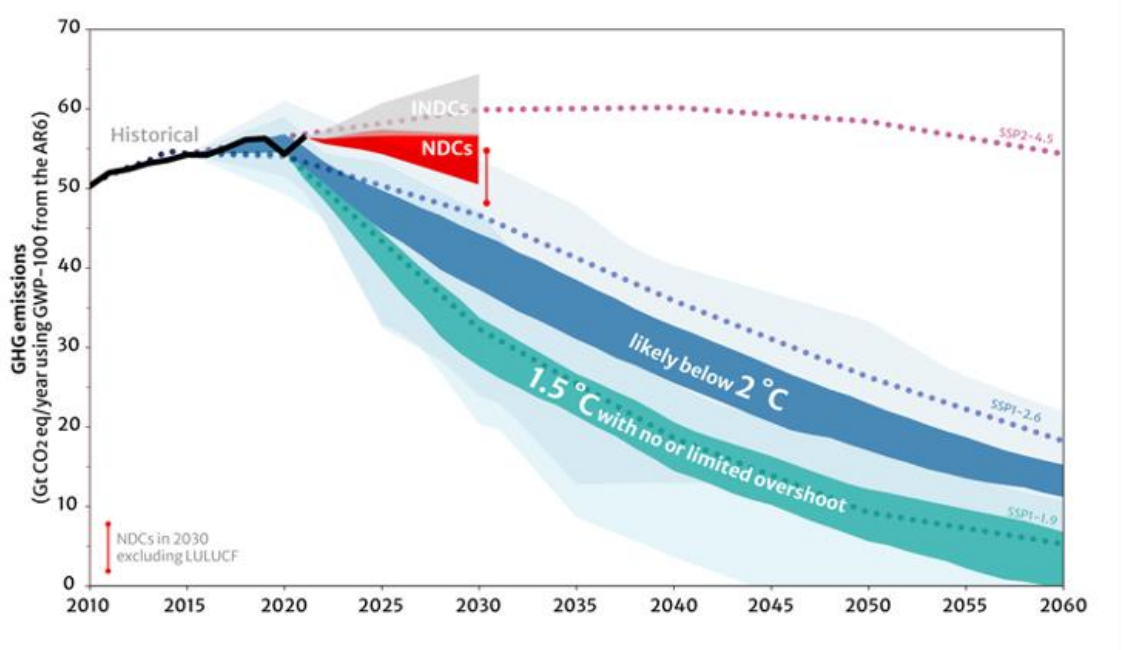
Our members have a long-term stake in ensuring our capital and regional cities thrive and want to see decisive action on both climate mitigation and adaptation to avoid the worst projected impacts of climate change.

General comments

Our members welcome the Australian Government's efforts to set more ambitious carbon abatement targets, supported by targeted policies and incentives.

As a signatory to the Paris Agreement, Australia has committed to limit global warming to well below 2 degrees Celsius above pre-industrial levels, with efforts to limit it to 1.5 degrees Celsius. However, it is clear that the combined international efforts committed in current Nationally Determined Contribution's fall well short of achieving this goal (Figure 1).[1]

Figure 1 - Historical and projected total global emissions according to nationally determined contributions[2]



We understand the Climate Change Authority will submit its review of the potential technology transition and emissions pathways for 6 sectors–electricity and energy, transport, industry and waste, agriculture and land, resources, and the built environment- and the development of the government's Net Zero by 2050 Plan. Collectively, this advice will inform the process to develop Australia's 2035 emissions reduction targets for inclusion in Australia's next NDC, and help identify opportunities for high impact policies to deliver the 2035 target.

We have outlined below our priorities concerning matters raised in the issues paper. We note that the buildings sector presents opportunities for extensive and low-cost emissions reduction. The built environment has the technology to decarbonise now – but we must do this at speed and scale to smooth the way for other hard-to-abate sectors.

We have also provided detailed feedback the Climate Change Authority should consider in the development of the Built Environment Sectoral Pathway, including opportunities for the Australian Government to support uptake of relevant technologies at **Annexure A,** and a summary response to the Climate Change Authority's consultation questions at **Annexure B.** We have also included a copy of our joint report with the Green Building Council of Australia 'Every Building Counts' at **Annexure C**, which sets out our suite of detailed policy recommendations to decarbonise Australia's built environment.

[1] 2023 NDC Synthesis Report
[2] Ibid.

Our Priorities

1. **An ambitious and evidence-based 2035 target, which strategically delivers steep emissions reductions early through high impact, low cost and shovel-ready abatement opportunities**.

   Buildings present enormous, cost effective and immediate emission reduction opportunities.

   Now that Australia has legislated an economy-wide target for net zero emissions by 2050 and is likely on track to deliver its strengthened 2030 target, a new interim 2035 target should be ambitious, leveraging existing abatement opportunities to the greatest extent possible.

   Emissions added to the stock of greenhouse gases in the atmosphere each and every year, contribute to atmospheric concentrations that put us further away from avoiding unacceptable warming scenarios. Warming outcomes are incredibly sensitive to the level of action taken in next decade because eventual heating depends on the accumulated stock of greenhouse gases in the atmosphere. While it is imperative that all sectors of Australia's economy are supported to decarbonise, the climate science is clear: prioritising the delivery of immediately accessible opportunities to reduce emissions is essential to limiting future warming.

   The potential of Australia's built environment to reduce emissions should not be underestimated: buildings account for half of Australia's electricity use and almost a quarter of Australia's greenhouse gas emissions through their operations. Implementing a comprehensive suite of energy efficiency policy measures could deliver $20 billion in financial savings by 2030, and 64MT of avoided CO2-e emissions by 2050.[3] Further, electrifying the built environment could deliver 199MT avoided CO2-e emissions and $49 billion in energy savings by 2050 compared to business as usual.[4]

   We have welcomed the decision of the Australian Government to seek independent advice from the Climate Change Authority on a sectoral pathway to decarbonise the built environment. The technology already exists today to decarbonise built environment operations – but we must do this at speed and at scale to smooth the way for other hard-to-abate sectors.

   Recommendation: The Climate Change Authority must, in its advice to the Australian Government highlight the importance of accelerating decarbonisation of the built environment as a priority to deliver significant levels of low-cost abatement in the near-term. This reflects the need to focus on driving a steep abatement curve, early, in order to avoid the future impacts of emissions that could readily be reduced today. This should also include decisive action on rapidly reducing methane emissions, given their high global warming potential and is consistent with Australia's commitment to the global methane pledge. We have provided further detail in **Annexure A.**

[3] ASBEC, Low Carbon, High Performance, May 2016.
[4] ASBEC, Unlocking the Pathway: Why Electrification is the Key to Net Zero Buildings, December 2022.

Recommendation: We agree that to deliver an achievable target requires designing an overall pathway that every sector can contribute to meeting. However, the issues paper describes the distribution of emissions across the six identified sectors based on Scope 1 emissions. In the case of energy and electricity this artificially creates a focus on driving abatement through supply-side intervention and overlooks demand-side actions (e.g. energy efficiency). We have provided further detail on this issue in **Annexure B**.

2. **Accelerate the shift to high performance buildings with targeted incentives and prioritise opportunities to support electrification and energy efficiency retrofits across all building types.**

Market leaders in Australia's property sector have made significant progress in recent years, however energy efficiency and resilience investments remain a low priority for most stakeholders in the built environment. This is due to barriers such as the perceived difficulty of building upgrades, high upfront costs and, in some cases, long payback periods. Financial incentives can drive accelerated uptake of energy efficiency and distributed energy technologies in new and existing buildings, by helping to reduce the gap between energy efficiency outlays and returns, and motivating action by building owners and tenants.

Most buildings standing today will still be operational in 2050. Findings from ASBEC's report, Unlocking the pathway: Why electrification is the key to net zero buildings,[5] highlights electrification of equipment as the fastest and cheapest way to decarbonise building operations. Electric equipment can achieve higher efficiency levels than alternative technologies and when combined with renewable electricity, delivers a net zero solution to building services.

The transition to fully electric, zero-carbon-ready buildings involves upfront costs that many home and commercial building owners will find difficult. In this case, direct incentives and tax concessions that are performance linked are a proven enabling mechanism. We also note the importance of ensuring equitable access to opportunities by prioritising vulnerable cohorts.

Recommendation: Large existing buildings can be complex and costly to electrify. Heat pumps and thermal storage tanks can require more physical space than gas boilers and increased electrical capacity to produce the same HVAC and hot water services. The Climate Change Authority should identify opportunities for targeted incentives and co-investment programs to support the business case for electrification in all building types.

Recommendation: Incentivise deep retrofits in buildings through expanding disclosure of building performance by leveraging existing benchmarks and professional certifications. We recommend the Commonwealth establish a targeted program where individual buildings and portfolios could be rewarded for improving their NABERS Energy ratings or Green Star – Performance ratings and reducing emissions year-on-year from a specified baseline. We believe this would also prove a useful tool to track progress against targets.

[5] Above n 4.

Recommendation: To effectively scale the uptake of electrification technology in both our existing and new building stock the Climate Change Authority should recommend the Australian Government demonstrate leadership by setting an end date for the use of fossil gas in buildings to provide long-term regulatory certainty for industry – builders, design professionals and product manufacturers. An orderly approach to avoiding expansion of the distributed gas network, which will become a stranded asset in the coming decades, is essential.

While some State jurisdictions have already taken steps to reducing the use of fossil fuels in buildings, there is a clear need for consistent actions through aa national roadmap to ensure no Australian is left behind. The roadmap should include a strong focus on education and awareness of the benefits of energy efficiency and electrification.

3. **Policy settings designed to incentivise the update of new technology should be used to "lock in" abatement through progressive minimum standards.**

Building design, construction methods as well as equipment and appliances are important components of the overall energy use for buildings. Strong minimum standards can drive improvements in a building's energy performance by ensuring that equipment and appliances on the market are consistent with Australia's emissions reduction targets.

We acknowledge the effectiveness of the Greenhouse and Energy Minimum Standards (GEMS) program in reducing the energy use of appliances in Australia. However, overall, Australia's standards are lagging behind other countries and the pace of development of new technologies. Policies designed for building equipment should identify key stages to maximise outcomes such as major renovations, equipment replacement or lease commencements. Targeting these critical stages will reduce costs and increase industry engagement and the impact of policies.

Similarly, minimum construction standards that enhance the performance of buildings should be reflected in the National Construction Code and subject to effective enforcement.

Recommendation: The Climate Change Authority should consider all policy levers available to government to promote both the uptake and operationalisation of technology. This must include a stepped approach to targeted incentives backed in by the development/expansion of minimum standards where appropriate. Key mechanisms for the buildings sector include planning frameworks, the National Construction Code, MEPS and GEMS standards for appliances. This process should be completed in consultation with relevant industry stakeholders.

4. **Consider a more holistic approach to identifying built environment emissions reductions opportunities and recognise the cross-sector influence of property sector demand for upstream inputs, including renewable energy and materials to enhance circularity and reduce embodied carbon.**

<u>Renewable Energy</u>

Our energy system is undergoing a once-in-a-century transformational change. Carbon intensive electricity generation infrastructure is being replaced with low-cost renewables

supported by firming capacity, and the capacity of the electricity system must be increased to accommodate higher demand from the electrification of new sectors such as the built environment and transport. Today the NEM delivers just under 180 TWh of electricity per year, but demand could potentially double to 320 TWh per year by 2050.[6] This energy will be delivered almost solely by renewables with large-scale wind and solar capacity projected to triple by 2030.[7]

As the largest consumer of electricity, the built environment sector will rely on decarbonisation of the energy grid to occur along-side electrification. We cannot overstate the importance of coordination between the Built Environment Sector Pathway and Plan and the development of an Energy and Electricity Sector Pathway and Plan. Supply and demand side policy interventions are two sides of the same coin, and we encourage the CCA to make it clear the points at which the Energy and Electricity Sector Pathway, which has a focus on decarbonising energy supply, will intersect with equally important demand-side policies.

Embodied Carbon & Circularity

Embodied carbon is defined by the World Green Building Council as "carbon emissions associated with materials and construction processes throughout the whole lifecycle of a building or infrastructure". The omission in the issues paper of the role of embodied carbon within the built environment overlooks a large part of the sector's contribution to Australia's overall emissions profile. In 2019, it made up 16% of Australia's built environment emissions.[8]

Without intervention this share will balloon to 85% in 2050 at a time when Australia must achieve net zero emissions in line with the Paris Agreement.[9] Given the role of international supply chains in the built environment sector, it cannot be assumed that targeting the Scope 1 emissions at the point of product manufacture through other Sectoral Pathways will be sufficient - as this will only considers domestically manufactured products.

Likewise, we anticipate that circularity will play a crucial role in supporting decarbonisation through better material efficiency and adaptive reuse will help retain, rather than add to the embodied carbon in existing building stock.

Recommendation: We caution against viewing built environment emissions reductions opportunities through a purely technology-focused lens, as these are complex systems with a number of interactions. In addition, we urge the inclusion in all sector pathways the recognition of, and actions to reduce, embodied carbon and promote circularity.

Where there are constraints in the scope of the Climate Change Authority's work program, the independent advice should note that considering the built environment solely through a technology lens should not be interpreted to limit analysis of Scope 1 operational emissions. This approach may distort analysis and could result in misleading economic

[6] AEMO, 2022 Integrated System Plan for the National Electricity Market, 2022.
[7] Ibid.
[8] Embodied Carbon and Embodied Energy in Australia's Buildings, GBCA and Thinkstep ANZ (2021).
[9] Ibid.

framings. Some of the highest impact, and lowest cost opportunities for our sector address Scope 2 and Scope 3 building emissions.

The Property Council looks forward to further engagement on this important work program. As an industry, we have compiled a wealth of resources on these matters and would be very pleased to meet with you and discuss our research and recommendations in more detail.

Please reach out to Eleanor Sondergeld, National Policy Manager – Sustainability and Regulatory Affairs at esondergeld@propertycouncil.com.au or 0423 867 035 should you wish to discuss this submission in further detail.

Yours faithfully,

Frankie Muskovic
National Policy Director
Property Council of Australia

Annexure A - Built Environment Sectoral Pathway

1. Background

Buildings account for over half Australia's electricity usage and almost a quarter of emissions through their operations, split fairly evenly between residential and commercial buildings.[10] Market leading property companies have demonstrated the potential for increased energy performance and have reduced their emissions intensity by 52% compared to a 2005 baseline.[11] These companies consistently top international benchmarks like the Global Real Estate Sustainability Benchmark and Dow Jones Sustainability Index and many have committed to achieving net zero emissions by 2030 or sooner.

The challenge for policy makers is to extend the substantial progress made by market leaders across the sector as a whole. Over the same period, overall energy intensity improved by only 2 per cent for commercial buildings and by 5 per cent for residential buildings.[12] Modelling undertaken by ClimateWorks shows cost-effective energy efficiency actions across the sector could deliver a 23 per cent reduction in emissions by 2030, and 55 per cent by 2050.[13]

2. Climate Change Authority: Sectoral Pathway

In delivering independent advice to the Australian Government on a potential technology transition and emission pathways, we understand the parameters of the sectoral pathways work will examine existing and prospective opportunities to achieve reductions and identify which technologies may be deployed in each sector to support emissions reduction.

While we acknowledge the need to avoid duplication across sectors, we are concerned the current approach as set out in the issues paper places too much emphasis on each sector addressing its own Scope 1 emissions. The Sectoral Pathways work will have the greatest impact where it can link opportunities to operationalise technology that will drive down emissions - irrespective of whether that technology reduces emissions that are Scope 1, Scope 2 or Scope 3. We do not consider the terms of the referral of this under Section 59 of the Climate Change Authority Act (2011) to limit consideration of downstream technologies.

We strongly recommend the Climate Change Authority reviews and amends its approach to classification of emissions, as presented in Appendix 2 of the issues paper. While we understand this table within the issues paper reflects an initial and experimental approach, further segmentation of data is necessary to support analysis in line with initial findings presenting in the sectoral pathway technology tables at Appendix 3. Primarily there is a disconnect between the identified total Scope 1 emissions from electricity and the technology opportunities for abatement that sit within both Scope 1 (supply-side) and Scope 2 (demand-side) changes.

Ultimately, we recommend that the advice provided to government reflects the impact of a technology pathway in each sector on Australia's overall emissions. There are a variety of cross

[10] Australian Government Department of Climate Change, Energy, the Environment and Water, 2023; Australian Government, Department of Industry, Science, Energy and Resources, National Energy and Emissions Audit 2020.
[11] Better Buildings Partnership, Annual Results FY18, 2018.
[12] Above n 10.
[13] Ibid.

cutting abatement opportunities in the built environment and other sectors. To best direct government efforts the proportional impact of these interventions should be reflected in the authority's advice to government.

3. What are the technology opportunities?

Last year, the Property Council in collaboration with the Green Building Council of Australia (GBCA) released our joint report Every Building Counts: Innovating for a greener healthier, and more equitable built environment (**Annexure C**). This report provides a comprehensive review of global and local policies with a proven record of emissions reduction to inform recommendations with the best value for governments and industry.

Consistent with our report, technology and operational priorities for the built environment sectoral pathway should reflect an objective to deliver zero-carbon-ready buildings that can operate in a low emissions economy. As defined by the International Energy Agency, "a zero-carbo-ready building is highly energy-efficient and either uses renewable energy directly or uses an energy supply (e.g. electricity or district heating) that will be fully decarbonised by 2050.[14]

We recommend the Climate Change Authority consider technologies that will support buildings to be:

- **High efficiency, high performance:** All buildings and infrastructure are energy efficient, reducing stress on the grid.
- **Fossil fuel free and fully electric:** Buildings do not use fossil fuels for heating, hot water, cooking and onsite energy generation.
- **Powered by renewable electricity**: All energy used in buildings comes from 100% onsite or offsite renewable sources.
- **Grid responsive:** Buildings that interact with the grid in a way that minimises the need for additional network , including infrastructure and response and allowance for electric vehicles.
- **Offset with nature:** The balance of residual, hard-to-abate emissions are compensated or neutralised through investments in high-integrity, nature-based carbon offsets.
- **Low embodied carbon:** Built using materials with significantly lower embodied carbon. Emissions are reduced during construction.

There are a diverse range of technologies that will be needed to achieve these listed objectives, and different policy interventions will be needed to target different building types. Nonetheless, there are some common barriers which should inform the Climate Change Authority's approach.

4. Barriers to technology adoption in the built environment

Decision makers in the built environment are extremely diverse; building owners and tenants who are fragmented across many different jurisdictions and levels of government. In the context of existing buildings, the transition to fully electric, zero-carbon ready buildings involve upfront costs that many home and commercial building owners will find difficult.

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[14] International Energy Agency, Technology and Innovation Pathways for Zero-carbon-ready Buildings by 2030 A strategic vision from the IEA Technology Collaboration Programme, 2022.

Barriers to action are by no means isolated to financial considerations. In fact, there is clear evidence in relation to energy efficiency that the among the strongest barriers are behavioural and awareness-related. The latest research and analysis in this area proves the adage: what is measured is managed.[15]

Information

A lack of information and transparent disclosure concerning performance of buildings, is a clear barrier to reducing emissions in the built environment. When building owners, tenants and investors know better, they can do better. Clear information about the performance of buildings alongside relevant benchmarks, whether those buildings are residential or commercial, empowers occupants to direct investment in high impact technology upgrades. In the absence of that information, it can be challenging for building owners to identify the most impactful and lowest cost options to improve their building performance.

Cost

The high capital cost associated with retrofits poses a barrier to technology implementation in all building types. Once rating schemes and benchmarks are established, governments can mobilise private capital by offering performance-based incentives. This principle applies equally in the context of a decision to purchase or renovate a home, or institutional investors looking at portfolio level performance of a built environment asset class. To promote equitable access across the community, the Australian Government should consider the use of low and no cost financing mechanisms.

Inertia

Finally, the perceived complexity of improving existing buildings and operationalising new technology is a clear opportunity for government leadership. Funding pilot and demonstration projects and/or making relevant upgrades to government owned assets is a useful tool to build capacity in the construction industry. This can also bring a range of other co-benefits. For example, electrification and improving the energy performance of community housing can serve to both reduce emissions and support Australians who are least equipped to afford rising energy costs.

5. Government Support

Government action to address these barriers must include a combination of mandatory measures ('sticks'), incentives and other measures to motivate and support higher performance ('carrots') and enabling measures to provide the right conditions for least-cost, large-scale action ('tambourines'). Experience from Australia and overseas has shown that addressing these barriers requires strong, long term and targeted policy and programs.

5.1. Residential Buildings

[15] The CIE, Independent Review of the Commercial Building Disclosure Program draft report, 2019.

Australia's homes currently generate around 13 per cent of Australia's greenhouse gas emissions through their operation. As our population grows to an estimated 31 million people by 2030, as many as 197,000 homes a year will need to be constructed to meet population growth.[16]

Already high – and rising – house prices and rental costs are exerting significant financial stress on households, particularly in the context of low real wage growth. Rising energy prices are adding to the burden. It has therefore never been more crucial for governments to focus on energy efficiency and electrification measures that will drive down both energy bills and emissions.

Existing residential buildings are particularly challenging to drive abatement at scale. An absence of policies that allow for the measurement and disclosure of the energy performance of homes, a lack of ambition and dedicated focus from governments to drive deep efficiency and electrification retrofits, through incentives and targeted programs, means progress has been minimal in recent years.

5.1.1. National Home Energy Ratings

Low-energy homes can reduce living costs, empowering inhabitants to put money that would otherwise have been spent on energy bills towards essential expenses, and investment in additional energy efficiency improvements which further reduce living costs.[17] However, research confirms that consumers are unclear of their choices and the residential building supply chain is locked into structures that severely limit the support and growth of a market for more energy efficient homes.[18]

Working with state and territory governments, the Australian Government should develop a single, coherent national rating scheme to facilitate disclosure of performance in residential buildings, that includes:

- providing benchmarks for market comparison of best practice sustainability performance; and
- a best practice governance model based on NABERS that brings the Commonwealth, state and territory governments together to collectively manage benchmarks for new homes.

5.1.2. Support for retrofits tied to ratings for homes

A national rating scheme that measures the energy performance of homes – either in a voluntary or mandatory context – could be leveraged to incentivise and reward improvement of home energy ratings by homeowners.

Once we can measure the performance of our homes, the possibilities for other incentives tied to increased performance improve significantly.

The Commonwealth should work with state and territory governments, as well as the property and finance sectors, to accelerate the expansion of financing mechanisms incentivising energy efficient, low emissions homes and retrofits. Measures could involve funding the development of

[16] ASBEC and CRC for Low Carbon Living, Growing the market for sustainable homes: Industry roadmap, 2019
[17] ASBEC and ClimateWorks Australia, The Bottom Line - The household impacts of delaying improved energy requirements in the Building Code, 2018
[18] Above n 17.

home finance products such as discounted. Other measures include equity loans and home improvement loans, or incentivising industry to develop innovative ways of reducing the cost of retrofitting housing stock.

5.2. Commercial Buildings

In the commercial building sector, market leaders have made significant progress in recent years, however energy efficiency and resilience investments remain a low priority for the long tail, noting the fragmented ownership and capacity of the industry to act. This is due to barriers such as the perceived difficulty of building upgrades, high upfront costs and long payback periods. Financial incentives can drive accelerated uptake of energy efficiency and distributed energy technologies in new and existing buildings, by helping to reduce the gap between energy efficiency outlays and returns, and motivating action by building owners and tenants.

5.2.1. Provide Tax Incentives

The transition to efficient, fully electric buildings involves upfront costs that many building owners will find difficult. In this case, direct incentives and tax concessions for electric appliances are a proven enabling mechanism. The Federal Government should work with state and territory, as well as local governments to deliver financial incentives that encourage the built environment towards fully electric buildings with reduced emissions.

- Immediately modernising the 10 percent Clean Building Managed Investment Trusts (MIT) withholding tax regime by:
    - expanding the regime to all buildings held for rental purposes (regime is currently limited to offices, hotels and shopping centres)
    - applying the rate to buildings that have been refurbished to achieve the necessary NABERS or Green Star ratings (regime is currently limited to newly constructed buildings)
    - applying the test on an asset-by-asset basis (regime currently requires all of the MIT's assets to satisfy the Green Star rating requirements) — committing to reviewing the scope of the tax regime with a possible expansion to include climate resilience and fuel switching in buildings.
- Extending the instant asset write-off scheme to include energy efficiency upgrades of buildings up to 150k.
- Green depreciation, which would see the deferment of taxable income in early years in exchange for bringing forward investment in large upgrades that exceed the instant asset write-off threshold.
- Rates and charges relief for buildings that satisfy a performance standard, for instance stamp duty and land tax concessions for high performing buildings.

5.2.2. Improve business case for electrification

The business case for new buildings to be all electric is well-established, but this is not always the case for existing buildings. While electrification is still the least-cost way to decarbonise building operations in existing buildings, it is not always a no cost solution. Existing buildings can be complex and costly to electrify. Heat pumps and thermal storage tanks often require more physical space

than gas boilers and increased electrical capacity to produce the same HVAC and hot water services. The Federal Government should identify opportunities for targeted incentives and co-investment programs to support the business case for electrification in all building types.

Australia has many examples of using direct incentives to transform markets. For instance, the Small-Scale Renewable Energy Scheme has resulted in the highest penetration of solar on homes in the world. Good program design has seen transaction cost minimised while over a quarter of homes have had solar installed.

5.2.3. Fund Innovation

R&D, pilot programs and efforts to commercialise new approaches and technologies can unlock new opportunities for resilience, energy savings and distributed energy in the built environment. Australia currently lacks a cohesive research agenda on energy and resilience issues and faces many gaps in the support for built environment innovation. As a result, there is no nationally agreed program to prioritise and deliver low carbon, high resilience construction methods or technologies, or to consider future opportunities for the built environment and other sectors like demand side initiatives and transport that will become increasingly integrated in buildings.

The Federal Government should leverage existing high performing bodies like the Australian Renewable Energy Agency (ARENA) and the Clean Energy Finance Corporation (CEFC) to deliver an innovation and commercialisation agenda in the built environment. ARENA and the CEFC should be well resourced and their future assured. They should be tasked with delivering innovation for our energy grids, the built environment, transport and their integration with each other.

5.2.4. Expand NABERS and the CBD Program and promote uptake of rating tools by governments and industry

NABERS and Green Star are world leading rating tools that have equipped the Australian built environment with uniquely robust sustainability credentials. They have been widely adopted by market leaders through schemes like the Commercial Building Disclosure Program and voluntary action by industry. Evidence tells us that once building owners and managers become aware of their energy performance they tend to improve over time. There remain large segments of the market across many asset types that have not yet engaged with these rating tools and have been isolated from their benefits.

The Federal Government should provide long term funding commitments to support the expansion of NABERS to other building types and the regular review and expansion of the Commercial Building Disclosure Program to cover more building types. This would ensure the breadth of Australia's built environment can benefit from the ongoing measurement, verification and performance management of buildings the program provides. NABERS should be further leveraged to drive emissions abatement in buildings through a targeted national program. The Federal Government should fund emissions reduction in buildings by establishing a national program targeting annual improvements in certified NABERS Energy ratings, modelled on the NABERS method in the NSW Energy Savings Scheme.

6. Role of Standards

Mandates, rules and standards play an important role in "locking in" abatement through progressive minimum standards. In the built environment, implementing and enforcing building codes and performance standards, as well as efficiency standards and benchmarks that apply to both new and existing construction will inevitably raise the energy and emissions performance "floor" for market available buildings technologies. Efforts to enhance or establish new standards should be preceded by work to normalise new technologies and processes.

6.1. Future-proof new buildings

Progress in improving energy efficiency across the building sector has been slow, with overall energy intensity improving between two to five percent over the decade from 2005 to 2015. This is despite market leaders delivering world class low-energy buildings, suggesting a widening gap between industry leaders and the rest of the market. Minimum requirements for new buildings and fitouts, with a forward trajectory for strengthened requirements over time, can play a role in closing this gap. The National Construction Code (NCC) is an existing instrument that is fit-for-purpose to deliver an accelerated trajectory for resilient, all electric, zero-carbon-ready buildings.

Our homes and commercial buildings can be cleaner and healthier while saving money when they are efficient and fitted with all electric technology. Working with its state and territory counterparts through the Building Ministers' Meeting and the Energy Ministers' Meeting, the Federal Government should lead the revision of the national trajectory for future upgrades to minimum energy performance requirements in the NCC, starting with a step change for commercial buildings in 2025. The Australian Building Codes Board has commenced work to develop a case for these performance changes. The revised trajectory should be transparent, have broad industry support, and be consistent with the long-term goal of a net zero emissions economy.

6.2. Phase out gas and strengthening appliance and technology standards to maximise abatement from electrification

As noted in Every Building Counts, many buildings are already enjoying the benefits of being all electric in their operations. Others still operate on fossil gas equipment, which is less efficient, has potential negative health impacts, and generates additional network expenses. Estimates show that there are 2.9 million gas heating systems and 5.2 million gas hot water systems currently installed in Australian homes.[19] National building regulation still allows new homes and buildings to install new gas connections and gas appliances.

The Australian Government should work with state and territory governments to develop a national plan for the electrification of buildings that has a clear timeline for phasing out fossil gas in new and existing homes and buildings. This will provide the market with the signals appropriate to ensure a smooth transition of the existing building stock to all-electric and the economic rollback of gas delivery systems and gas appliances. The BESP, EESP and relevant national policies and strategies should provide a considered, consistent and coordinated approach, with clear and strong guidance developed to facilitate an orderly phasedown of the reticulated fossil gas network to avoid a disorderly transition that will impact vulnerable consumers the most.

[19] Energy Rating, 2021 Residential Energy Baseline Study: Australia and New Zealand.

This transition should also consider how to maximise abatement through setting energy performance of electric appliances. While wide-spread electrification is essential to decarbonising the built environment, not all electric appliances and technologies are created equal. The Australian Government should enhance consumer choice and improve transparency through relevant product standards.

The Equipment Energy Efficiency (E3) program has been effective at implementing labelling and minimum energy performance standards for appliances. The Greenhouse Energy Minimum Standards (GEMS) regulations save the average Australian household between $140 and $220 on their electricity bill each year[20] (about 10 to 15 percent of the average annual bill). McKinsey[21] identified appliance energy efficiency measures as a negative cost source of abatement. The Department of Climate Change, Energy, the Environment and Water estimates that GEMS regulations to date have provided emissions abatement at a negative cost of around $200/tonne. There is significant scope to increase the performance of this program by expanding it to new products.

The Federal Government should build on the success of the E3 program by expanding it to new products and establishing a trajectory of cost-effective upgrades to minimum standards over time. New products should be prioritised on their predicted uptake and relative energy consumption. In particular, heat pumps are currently not captured by labelling or minimum standards and should be elevated as a priority for the Federal Government.

6.3. Drive Harmonised compliance monitoring and enforcement of the National Construction Code

Non-compliance with the National Construction Code is an ongoing issue. It is not only unlawful, but also undermines the rights of building purchasers and occupants who are not receiving what they are legally entitled to, and provides an unfair advantage to operators who cut corners. While non-compliance impacts a number of different areas, there is a need for a specific focus on energy efficiency compliance if the NCC is to support the transition of new buildings to becoming zero-carbon-ready.

The Federal Government should support a coordinated approach with state and territory governments to address issues relating to compliance and enforcement highlighted through the Shergold Weir Building Confidence Report. While focused primarily on safety issues, many of the recommendations from the review have relevance to energy efficiency. The Australian Buildings Codes Board (ABCB) has delivered a model framework for the consistent implementation of Building Confidence Report recommendations for states and territories to adopt.

The Federal Government should work with the Building Ministers' Meeting to deliver a harmonised implementation of the ABCB's model guidance throughout all states and territories. The model guidance includes but is not limited to the registration and training of building practitioners, publication of state and territory government audit strategies and identification of defects, consistent requirements for documentation of performance solutions involving complex energy modelling, and on-site inspections timed to ensure compliance with energy efficiency provisions can be verified.

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[20] Greenhouse and Energy Minimum Standards (GEMS) Act 2012 Review - Final Report 2019, Department of the Environment and Energy, (2019).
[21] An Australian Cost Curve for Greenhouse Gas Reduction, McKinsey and Company, 2008.

7. Other issues

Buildings constructed today will remain in use for decades and must therefore be designed to deliver increased resilience to more frequent and severe extreme weather and preserve the safety of occupants. Further, efforts must be made to retrofit existing buildings to be more resilient to climate change.

As part of the Australian Government's commitment to deliver a national framework for climate change mitigation and adaptation across the economy, a national plan for a climate resilient built environment is essential. The plan should encompass a range of measures that establish best practice technical requirements for building construction to ensure occupant safety and preserve buildings (where appropriate and cost effective) in the face of our changing climate. Initially, a nationally agreed set of future climate scenario data is required to determine structural and resilience requirements in new buildings. This dataset should be used to underpin a comprehensive framework of scheduled updates to regulation, targeted retrofits and land-use planning requirements.

Annexure B - Response to Consultation Questions

2024 Issues Paper: Targets, Pathways and Progress	
Question	PCA Response
1. How should the authority take account of climate science and Australia's international obligations in considering possible emissions reductions targets for 2035?	Now that Australia has legislated an economy-wide target for net zero emissions by 2050 and is likely on track to deliver its strengthened 2030 interim target, an updated NDC must seek to reduce Australia's emissions in line with keeping warming well below 2 degrees and aim to keep warming below 1.5 degrees Celsius. The IPCC has already projected that global average temperatures are estimated to rise 1.5 degrees Celsius (2.7 degrees Fahrenheit) above preindustrial levels sometime around "the first half of the 2030s." To maintain a 50% chance to keep warming below 1.5 degrees, all industrialised nations would need to halve emissions by 2030 and then stop adding greenhouse gases to the atmosphere altogether by the early 2050s.[22] However, reductions in fossil fuel use alone – even in the IEA's Net Zero Emissions by 2050 Scenario – do not achieve deep enough cuts in methane emissions to reach levels consistent with limiting warming to 1.5 °C with no or low overshoot. Additional, targeted actions to tackle methane emissions from fossil fuel production and use are essential to limit the risk of crossing irreversible climate tipping points. Methane has a much shorter atmospheric half-life – around 12 years compared with centuries for CO2 – but it is a much more potent greenhouse gas, absorbing significantly more energy while it lingers in the atmosphere. The fossil fuel sector likely holds the largest potential for rapid and low-cost reductions in methane emissions and underscores the importance of rapidly decarbonising Australia's energy sector and the planned transition away from the use of gas appliances in buildings. The IPCC has reported that without targeted action on methane, even with deep reductions in fossil fuel use, the increase in the global average surface temperature will likely exceed 1.6 degrees Celsius by 2050.

[22] IPCC, Sixth Assessment Report, 2021.

	On that basis, it is imperative that all sectors of Australia's economy are supported to decarbonise, and steep abatement is delivered soon. A new interim 2035 target is an important opportunity to prioritise readily available technology opportunities. As we have outlined, the built environment offers enormous potential to reduce Australia's emissions in the short term. This approach is clearly aligned with the wealth of climate science that tells us the strong and decisive action is needed in this decade to curb the worst impacts of climate change.
2. How should the authority weight the goals of ambition and achievability in considering possible emissions reductions targets for 2035?	We support an ambitious 2035 target underpinned by a clear pathway to Net Zero in 2050. In terms of feasibility, the authority must consider the potential cost of inaction and the impact of interim targets on the achievability of Australia's commitment to Net Zero. The environmental, social and economic impacts of global warming that breaches the 1.5-degree threshold will be extremely damaging for Australians. Conversely, early and coordinated action offers enormous potential to both reduce emissions and generate net economic growth. In terms of achievability, a 2035 target must consider cascading impacts of an interim target on achieving a net zero economy by 2050. Ambitious action in this decade will reduce the cost burden of transition later, smoothing the way for hard-to-abate sectors.
3. How can Australia further support other countries to decarbonise and develop sustainably?	N/A
4. What technologies are important for each sector's pathway to net zero and why?	We have provided a detailed response to this question in **Annexure A** of this submission.
5. How can governments use mandates, rules, and standards to accelerate Australia's decarbonisation? Is more planning by governments needed? If so, how should this be coordinated and how can this be done while making the transition inclusive, adaptive, and innovative?	We have provided a detailed response to this question in **Annexure A** of this submission.
6. How can governments stimulate private finance needed for the net zero transition – are there innovative instruments that could be deployed or new business models that governments could support? Is there a bigger role for governments to	We have provided a detailed response to this question in **Annexure A** of this submission.

play in coordinating the investment needed to transition the economy?	
7. How can governments better support markets, including carbon markets, to deliver emissions reduction outcomes	Our industry's global leadership is built on a longstanding foundation of verifiable mitigation efforts targeting deep energy efficiency, the procurement and production of renewable electricity, and fuel switching from fossil fuels. Our sector emits almost a quarter of Australia's emissions and must decarbonise for our economy to reach net zero. During this period of transition, some emissions are more difficult to abate than others. Where residual emissions exist, offsets can deliver environmental benefits, as a compensatory measure, at the same time as organisations work to eliminate their emissions. Members of the property sector are sophisticated and responsible participants in carbon markets. As an industry, we have an accepted best practice approach to the use of offsets in the context of net zero strategies, outlined in a joint report from the Property Council and the Green Building Council of Australia: Carbon Offsets, Last but not later: A framework for the environmental integrity of offsets.[23] As the target date for many Net Zero commitments approaches, the global demand for quality offsets can be expected to increase while supply remains limited. Changes to the Safeguard Mechanism will also likely put pressure on the market for Australian Carbon Credit Units (ACCUs). The supply demand imbalance and the cost of creating highest quality offsets are likely to lead to an increase in prices. Nature-based offsets, with their accompanying co-benefits and low input costs are constrained by land availability and competition with agriculture for land area. Climate change may also challenge how carbon can be stored using nature-based systems. It is likely that property companies will increasingly find it most cost effective to eliminate operational emissions avoiding the need for offsets. However, there will remain a market for offsets in relation to truly residual emissions in order to obtain carbon neutral certifications. It is therefore important to the property sector that Australian Carbon Credit Units (ACCUs) and our national carbon crediting framework maintain a strong and credible reputation supported by participants, purchasers and the broader community. We commend the Australian Government's commitment to implement recommendations of the Independent Review of ACCUs (the Chubb review).

[23] Property Council and Green Buildings Council of Australia, Carbon Offsets, Last but not later: A framework for the environmental integrity of offsets, 2021.

	In terms of new market mechanisms, while the Australian Government's Emissions Reduction Fund (ERF) aims to target least-cost emissions reductions, structural barriers have prevented uptake in buildings, where many of the lowest cost opportunities exist. The generation of ACCUs has not proved to be an effective model to incentivise emissions abatement in our sector and we have seen very limited use of the Commercial Buildings ERF methodology.
8. What further actions can be taken by governments (e.g. through public funding), the private sector and households to accelerate emissions reductions, including in relation to the deployment of technologies and access to new opportunities in the transition to net zero? What barriers stand in the way and how could they be overcome?	We have provided a detailed response to this question in **Annexure A** of this submission.
9. How should governments decide upon the appropriate allocation of resources towards reducing emissions, removing carbon from the atmosphere, and adapting to climate change impacts?	Governments play an important role in strategically directing both mitigation and adaptation efforts. In terms of resourcing those efforts, it must be recognised that government has a variety of policy levers available to it. In the context of the built environment, mitigation and adaptation are highly integrated. Providing targeted incentives for high performance buildings will deliver immediate emissions reduction (mitigation) and improve the long-term resilience of buildings (adaptation). Additionally, resilience and adaptation must be embedded at the planning level. This will require coordination across Federal, State and Local governments and should focus on empowering action at the local level. <u>Mitigation</u> Reducing emissions should be the first, but by no means the only priority for government. In the short-term, government should seek to mobilise private capital towards driving down emissions by enhancing the performance of the assets that will have the greatest impact on the lives of Australians - the places where we live work and play. We have outlined in Annexure A, a range of mitigation actions including empowering consumer choice through rating and disclosure of building performance as well as providing financial incentives for electrification, energy efficiency, and solidifying gains through minimum standards. <u>Resilience</u>

	A strategic approach to adaption starts with enhancing the resilience of our communities to both acute shocks and chronic stresses. 'Shocks' relate to those sudden, sharp and often catastrophic events that threaten a city like bushfires, floods and heatwaves, whereas 'stresses' highlight those chronic, often long-term, pressures and trends that can weaken the fabric of a community e.g. systemic climate risks. Recognising and reflecting the needs of the community by providing an opportunity to meaningfully engage with and represent the most vulnerable members of a community is at the heart of resilience. Resilience should be considered a quality of a place and so identifying and understanding the shocks and stresses present within a community is necessary to inform all efforts to build and embed resilience. This forms a baseline from which actions and interventions can be developed. The most successful examples of resilience we see around Australia are community-led and with initiatives informed through deep community engagement. <u>Adaptation</u> In the built environment, addressing climate adaptation in planning, land use and building controls presents the biggest opportunity to embed resilience. While there are inherent challenges to planning reforms, greater economic benefits result from considering resilience in development phases, rather than retrofitting after natural disasters have occurred. By increasing coordination and mainstreaming resilience policy and planning, state governments can mitigate the forecast increase in natural disaster costs.
10. How can governments, businesses, and people, including First Nations people, help ensure the benefits and burdens of the net zero transition are equitably shared?	We have provided a detailed response to this question in **Annexure A** of this submission.
11. How can governments better ensure First Nations people are empowered to play a leading role in the development and implementation of climate change policies and actions, including as they relate to the ongoing curation of the Indigenous estate?	We strongly support elevation of First Nations peoples and recommend the Climate Change Authority seeks direct input from First Nations communities on these matters.

12. How can Australian governments support the wellbeing of workers, communities and regions as the nation decarbonises, including in relation to cost of living, workforce and industry transition and access to low emissions technologies and services?	The transition to low carbon, resilient buildings cannot be achieved without improving the skills and capacity of the workforce. To grow the market's capacity to deliver sustainable, resilient buildings, Australia must have a construction supply chain that can meet the needs of each industry sub-sector and jurisdiction. In particular, the wide scale electrification of Australia's built environment will require significant investment into upskilling the supply chain to deliver electrification and efficiency measures. Training and education will support industry capacity building, and alongside regulatory compliance, drive industry to deliver higher standards of building performance. The Federal Government should develop a national education and training agenda for building energy efficiency and resilience. Priority should be placed on ensuring effective compliance with minimum standards through skills training and incentives, and improved mechanisms for dispute resolution. There is an existing workforce specialised in fossil gas equipment that should be targeted to retrain and gain skills in electric technologies. Market transformation programs should be tailored for specific characteristics in each state and territory and be delivered locally to suit different building techniques, industry contexts and capabilities as well as climate zones.
13. How can governments help Australians prepare for and respond to the impacts of climate change?	We have provided a detailed response to this question in **Annexure A** of this submission.
14. What else should the authority be considering in its advice to government?	<u>Supply-Chain Circularity and Embodied carbon</u> The property sector is turning its attention to the challenges of sourcing low or zero carbon building products. An integrated innovation agenda working with property developers and local manufacturers could drive the innovation necessary to dramatically lower the embodied carbon in building products and create a major new export market for Australia. Significant work is currently underway across industry to tackle emissions across complex built environment supply chains. This includes ASBEC's Embodied Carbon Framework for the Built Environment project which aims to inform a long-term sectoral strategy for zero-carbon-ready buildings. An initial issues paper from the project will be released in mid- June this year. Other initiatives include work being done by NABERS to develop a carbon rating tool for buildings[24], and a requirement in NSW for all non-residential developments to disclose the quantities of key materials (for the superstructure, substructure and facade)

[24] NABERS, NABERS Embodied emissions initiative, 2021.

	and associated embodied emissions and describe how embodied emissions were minimised (by re-used or recycled content). The Australian Government's own recently released procurement policy also takes steps towards reducing embodied carbon through procurement decision-making. Sector pathways and plans must include actions to urgently reduce embodied carbon, not just in the built environment, but across supply chains, if Australia is to meet its emission reductions targets. *Every Building Counts* sets out several recommendations to put the built environment on a path towards zero embodied carbon emissions: • Adopt a credible national framework for measuring embodied carbon. • Introduce embodied carbon targets into the National Construction Code. • Create an embodied carbon national database for products and materials. • Introduce embodied carbon reduction requirements for government projects. • Support Australian product manufacturers and overseas importers to calculate and disclose embodied carbon content. We also note the recently released Circular Economy Ministerial Advisory Group Interim Report[25] and urge consideration of the recommendations detailed in this report to help address embodied carbon emissions (as well as addressing a range of other environmental issues and economic opportunities).

[25] Circular Economy Ministerial Advisory Group, Interim Report, 2024.