Green Building Council Australia

Building a sustainable future

11 July 2025

Ms Meg McDonald
Interim Chair
New South Wales Net Zero Commission

Via: https://www.netzerocommission.nsw.gov.au/engagement-consultation/2025-consultation

Dear Ms McDonald

Re: Consultation paper: Provide your input to inform our work and advice

The Green Building Council of Australia (GBCA) welcomes the opportunity to provide input to inform the future work and advice of the Net Zero Commission (the commission). We support the commission's inclusive approach to this consultation, as inviting input from all sectors and areas of adaptation not only draws on a wide breadth and depth of expertise but helps create shared ownership and responsibility in achieving our net zero goals.

Australia's built environment has seen progress in adapting to climate impacts and improving resilience. However, climate risks are escalating faster than collective efforts to plan, design, build, and operate more resilient buildings and infrastructure. We must urgently accelerate our response, through identifying risks earlier and embedding resilience into every stage of development.

GBCA's purpose is to lead the sustainable transformation of the built environment. We do this primarily through our core functions:

- We advocate policies and programs that support our vision and purpose.
- We educate industry, government practitioners and decision-makers, and promote green building programs, technologies, design practices and operations.
- We collaborate with our members and other stakeholders to achieve our mission and strategic objectives.
- We rate the sustainability of buildings, fitouts and communities through Australia's largest national, voluntary, holistic rating system – Green Star.

Green Star is Australia's most widely used sustainability rating system for the design, construction and performance of buildings – including social infrastructure – fitouts and communities. Green Star aims to transform the built environment by:

- reducing the impact of climate change
- enhancing our health and quality of life
- restoring and protecting our planet's biodiversity and ecosystems
- driving resilient outcomes for buildings, fitouts, and communities
- contributing to market transformation and a sustainable economy.

The built environment is responsible for about 42% of annual global CO2 emissions[1]. GBCA welcomes the focus on the built environment in the recent announcement of a new net zero plan for NSW by the Hon Penny Sharpe MLC, Minister for the Environment; Climate Change; and Energy. GBCA provides comments in response to the relevant consultation questions in the submission attached.

GBCA welcomes the opportunity to provide a briefing on our work and the opportunities for creating a clear plan for decarbonising NSW's built environment. To arrange further discussion please contact Shay Singh, Senior Manager Policy and Government Relations, via email at shay.singh@gbca.org.au.

Yours sincerely

Davina Rooney
Chief Executive
Green Building Council of Australia

[1] https://www.architecture2030.org/why-the-built-environment/

Consultation paper - Provide your input to inform our work and advice

GBCA provides comment on the following questions for consultation:

What can you tell us about your experience of the impacts of climate change and how can the commission seek to reflect and respond to this in its work?

The built environment is on the front lines of climate change, both as a contributor to emissions and as a vulnerable system. Impacts of climate change on the built environment are both physical and socio-economic and include:

- **Physical and environmental impacts**
  - Increased flooding and sea-level rise: More frequent and severe flooding affects homes, transportation systems, and utilities. Low-lying coastal infrastructure is especially at risk.
  - Overheating and urban heat islands: Cities are heating up due to climate change, especially during extreme heat events, which strain health systems and reduce livability.
  - Storm damage and wind stress: Stronger and more frequent storms are damaging buildings and increasing maintenance and insurance costs.
  - Drought and water scarcity: Water supply systems are under stress; droughts also affect landscaping and urban greenery.
  - Degradation of materials: Changing weather conditions accelerate wear on buildings and infrastructure, particularly with more freeze-thaw cycles or intense sun exposure.
- **Societal and economic impacts**
  - Increased inequality and vulnerability: Lower socio-economic communities often live in the most vulnerable areas (e.g., floodplains), in less resilient housing.
  - Displacement and housing pressure: Climate impacts are driving people from affected areas, increasing demand for resilient housing elsewhere.
  - Insurance and investment risk: Insurers are re-evaluating premiums and coverage, and investors are increasingly concerned about the climate resilience of assets.

These effects challenge the way we design, construct, maintain, and govern the places where people live, work, and interact. The commission has a powerful role to play in steering how our cities and places respond to these challenges - through leadership, policy influence, advocacy, and public engagement. By embedding resilience, equity, and sustainability into its core mission, the commission can help shape a built environment that is safer, fairer, and more adaptable for the future ahead.

What actions can the commission take to engage across the community to help drive the shifts needed for the net zero transition and for effective climate change mitigation and adaptation?

Achieving net zero and strengthening climate resilience requires collective action across all levels of society. Community engagement is essential not only for building public support, but also for unlocking local knowledge, encouraging behavioural change, and ensuring that adaptation and mitigation strategies are equitable, effective, and widely supported.

The GBCA recognises the NSW Consumer Energy Strategy as a strong example of how complex, high-level policy objectives can be translated into clear, actionable steps with tangible outcomes and benefits that resonate with the community.

The GBCA welcomes the opportunity to contribute to the commission's work by identifying specific actions that will enhance the resilience of the built environment, while also reinforcing its critical role in achieving NSW's net zero targets. Developing a clear plan for decarbonising NSW's built environment and ensuring

homes and buildings are resilient and zero-carbon-ready will be critical for engaging the community, businesses and industries, and governments in working towards shared goals.

How should the commission best engage with First Nations people to learn about cultural knowledge and practices to support adaptation, and what information and evidence should it draw on to inform its understanding of these practices?

Aboriginal and Torres Strait Islander peoples have cared for Country for tens of thousands of years. Country is not just land and waters — it encompasses deep spiritual, cultural, and emotional connections that cannot be separated from its physical form[2].

Respecting, learning from, and partnering with First Nations peoples is essential to achieving long-term outcomes, this also means that the needs of First Nations peoples must be included in all short and long-term solutions proposed by the commission. Future engagement must include:

- Respectful engagement with First Nations communities
- Support for place-based approaches led by Traditional Owners and Custodians
- Ensuring connection to Country is a core consideration in planning, design, and delivery
- Valuing cultural knowledge alongside ecological and technical expertise.

What additional mechanisms, support, or incentives can meaningfully empower and enhance First Nations people's involvement in climate mitigation, adaptation and environmental stewardship?

Early and ongoing engagement with Aboriginal and Torres Strait Island peoples is fundamental to learning from custodians who have developed and honed various land management practices known as caring for Country. Enabling their leadership is essential for achieving climate and environmental goals in a just, sustainable way.

What additional information and evidence should the commission consider when assessing progress towards NSW's targets for reducing net greenhouse gas emissions?

When assessing progress toward the NSW targets for reducing net greenhouse gas emissions, the commission should consider a comprehensive mix of quantitative and qualitative data, including sector-specific trends, equity impacts, and structural enablers or barriers to long-term decarbonisation.

The commission may also consider policies that will encourage home and building owners to go beyond minimum standards. For example, the Commercial Building Disclosure (CBD) program has driven up National Australian Built Environment Rating System (NABERS) certifications, energy performance and market demand for higher performing buildings, while driving down emissions and operating costs. Implementation of mandatory disclosure with a single, national rating tool for home energy performance would have a similar impact on the residential sector.

What short to medium term measures could be prioritised to address the systemic challenges regarding waste generation and resource recovery?

Establishing circular criteria within state public procurement policies is also vital to supporting circular materials management and construction techniques, creating demand across supply chains and encouraging innovation. A useful resource for government is GBCA's A practical guide to circular procurement for new buildings and major refurbishments, developed with support from the Queensland

[2] https://gbca-web.s3.amazonaws.com/media/documents/draft-nature-positive-roadmap.pdf

Government, NSW Government, Government of South Australia and the Clean Energy Finance Corporation (CEFC).

Greater focus is needed on strategies that prioritise waste avoidance, such as designing for longevity and disassembly, prioritising repair and reuse, and product stewardship. These strategies focus on retaining the highest value of materials in circulation for as long as possible, rather than devaluing materials in the linear, take-make-waste model in which our economy currently operates. Developing, implementing and strengthening upstream measures like these will help NSW move beyond managing waste to genuinely designing waste out of the system.

GBCA, in partnership with Coreo, CEFC and NSW Government, has just released the report, Australia's waste[d] opportunity[3]. Calculations in the report show that the construction of a new, average-sized (137m2) apartment in a major city like Brisbane has material costs of around $1740 per m2, while on average, we are wasting around 22% of materials. That's around 142kg of waste, and around $384 spent on wasted materials per square metre. If we consider the NSW Government's target of 377,000 new homes by 2029 under the National Housing Accord, there are clearly huge savings to be made if we focus on ways to reduce waste.

The world is demanding circular, low-carbon building materials and a growing, decarbonising economy needs an innovative and competitive supply chain. Investment by the NSW Government to create a more circular economy will cut waste, reduce emissions and create opportunities for NSW businesses to develop innovative, circular products and practices that will be in demand both domestically and internationally.

Recommendations from Australia's waste[d] opportunity report include:

- Introduce financial incentives such as rebates or subsidies for projects that achieve a high level of material recovery and secondary material reuse, rather than just reporting high diversion rates.
- Create dedicated grants for projects that focus on reuse or refurbishment of existing structures.
- Utilise landfill levies to not only discourage landfilling of unused materials, but to reward projects for diverting resources into secondary markets. Offer rebates to recyclers recovering over 90%, with the unrecoverable 10% receiving a full levy rebate if landfilled.
- Change state/territory targets from C&D landfill diversion rates to material circularity metrics and recovery channels.

GBCA recognises the NSW Net Zero Manufacturing Initiative which supports NSW businesses and industries to lead in the net zero transition by increasing their competitiveness, attracting investment and opening new growth opportunities. GBCA encourages the commission to consider how achievements and lessons learnt from this initiative could be expanded and built on.

What additional measures could accelerate electrification and increase energy efficiency of new and existing buildings?

GBCA strongly recommends introduction of building electrification regulations, like that in the Australian Capital Territory and Victoria. The Australian Sustainable Built Environment Council (ASBEC) report, Unlocking the pathway: Why electrification is the key to net zero buildings[4] confirms 100% electrification is the lowest cost, fastest emissions reduction pathway for Australia's built environment.

The benefits of electrifying our homes and building are clear. They include avoiding the health implications of using gas cooktops, and avoiding increasing cost burdens on renters, low income and vulnerable households as the price of gas increases and the number of users on the gas network decrease over time. Efficient, electric buildings will also deliver emissions reductions and help to support greater energy

[3] https://gbca-web.s3.amazonaws.com/media/documents/australias-wasted-opportunity---2025-benchmarking-report.pdf

[4] https://www.asbec.asn.au/wordpress/wp-content/uploads/2022/12/ASBEC-Unlocking-the-pathway.pdf

security. GBCA produced A practical guide to electrification: For new buildings[5] which outlines the steps involved in delivering an all-electric new building and the types of technologies that can be used today to replace natural gas systems with electric solutions.

Government action is needed to achieve electrification of Australia's built environment at the speed and scale we need. While we recognise the NSW Consumer Energy Strategy encourages and supports electrification in several ways, the introduction of building electrification regulations will play a vital role in achieving decarbonisation of NSW's residential and commercial buildings. In the absence of state-level leadership, several local governments in NSW have already introduced planning controls that limit new gas connections and/or gas appliance use with more to follow. GBCA commends the leadership of these councils, while urging a clear and ambitious state-led plan for a rapid and consistent transition away from fossil gas in homes and buildings.

Every Building Counts: For state and territory governments, jointly released by GBCA and the Property Council of Australia, recommends actions that governments can take to decarbonise the built environment. Please see some of these recommendations listed below:

Theme 1: Zero-carbon-ready, resilient building plan

1.1 Set a long-term strategy for zero-carbon-ready buildings
1.2 Set a long-term strategy for climate resilient buildings that can adapt to acute shocks and long-term stresses from climate change
1.3 Develop a plan for a just transition by prioritising support for low-income and vulnerable Australians

Theme 2: Electrification

2.1 Disallow new gas connections and require all new residential and commercial buildings to operate on high-quality electric equipment in National Construction Code 2025
2.2 Support a nationally harmonised approach to phase out fossil gas in existing buildings and appliances 2.3 Create a strategy and incentives for quality retrofits for existing commercial and residential buildings to support a just transition

Theme 3: Incentivise high performance

3.1 Accelerate the shift to high performance, sustainable buildings with planning incentives
3.2 Accelerate the shift to high-performance, sustainable buildings with targeted financial incentives
3.3 Introduce and support the harmonisation of energy efficiency and electrification obligation schemes
3.4 Support green loans and innovative finance products to drive high-performing homes and retrofits
3.5 Incentivise deep energy efficiency and electrification retrofits for existing homes
3.6 Shift the mid-tier commercial building market to better performance

Theme 4: Minimum standards

4.1 Support an accelerated trajectory for resilient, all-electric, zero-carbon-ready, healthy buildings in the National Construction Code (NCC)
4.2 Drive harmonised compliance, monitoring and enforcement of the NCC
4.3 Support renters with minimum performance standards for rental homes
4.4 Investigate energy performance standards for existing buildings
4.5 Accelerate targeted retrofits for public and community housing stock.

Theme 7: Robust rating tools for all building types

[5] https://gbca-web.s3.amazonaws.com/media/documents/a-practical-guide-to-electrification.pdf

7.1 Empower owners, buyers and renters with a single, national rating scheme for home energy performance.
7.2 Support mandatory performance disclosure for homes at the point of sale or lease
7.3 Support the expansion of NABERS to all building types and extend the Commercial Building Disclosure Program

How could social equity be better addressed in the transition to an electrified built environment?

Every Building Counts, our policy platform released in partnership with the Property Council of Australia, GBCA calls on all levels of government for increased support for households, businesses and industry to electrify homes and buildings, through awareness-raising, industry training, grants, incentives and other financial mechanisms.

Please note that many of the recommendations from Every Building Counts, including those listed above, are specifically aimed at supporting a just transition to an electrified built environment.

What approaches could NSW consider to eliminate refrigerants with a GWP >10 from buildings?

Synthetic refrigerants are made up of chemicals that have a high GWP. Alternatives to synthetic refrigerants include nature refrigerants such as water, carbon dioxide, ammonia, and hydrocarbons. They are currently available and are valid alternatives to current synthetic refrigerants

Eliminating refrigerants with a GWP greater than 10 from buildings in NSW is an ambitious but achievable goal. Green Star rating tool has established a framework for building owners to eliminate high GWP refrigerants which is being utilised voluntarily.

The Climate Positive Pathway[6] within the Green Star Buildings rating tool requires that buildings must be fully electric, fossil fuel free and 100% powered by renewables, while also considering both operational and embodied carbon emissions. Green Star's goal, in line with the World Green Building Councils' Net Zero Carbon Buildings Commitment,[7] is to ensure Australia can deliver all new buildings to be net zero carbon in operations from 2030 onwards.

For any project to be Green Star certified it must meet 10 minimum expectations. These expectations are set to ensure all Green Star rated buildings meet a basic definition of a green building. The project team must develop a Zero Carbon Action Plan for the building which includes quantification of refrigerants without interventions and once all interventions have occurred.

The Climate Positive Pathway requires the building owners to either:

- **Eliminate refrigerants** - high-GWP refrigerants must be eliminated from the building. The use of refrigerants with a GWP of 10 or less is considered to comply with the credit. Natural refrigerants in most cases comply with this criterion.
- **Offset refrigerants** - 100% of carbon emissions from refrigerants must be offset. Carbon emissions are calculated by multiplying the initial refrigerant charge by its Global Warming Potential (GWP) for each type of refrigerant present in the building and adding the emissions together.

All refrigerants from building systems or domestic appliances provided by the building must be captured in the credit. This includes where fridges or freezers are provided as part of a fitout package in a residential setting.

[6] https://gbca-web.s3.amazonaws.com/media/documents/carbon-positive-roadmap-discussion-paper-rev-a.pdf
[7] https://worldgbc.org/thecommitment/

GBCA is currently developing a discussion paper with AIRAH, Property Council of Australia and NABERS to highlight the impact of refrigerants. The discussion paper will:

- explores critical risks and future scenarios.
- define how refrigerant selection impacts building design
- asses what lower harm refrigerant means from a climate and health perspective
- provide recommendations for how to future-proof our buildings

The paper is due for release in the coming weeks, and we look forward to arranging a briefing for the commission.