Pathways Call for Evidence Submission

18 July – 14 August 2026

Submission type	Email
Submitter	Green Building Council of Australia
Response ID	388702

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Green Building Council Australia

Building a sustainable future

14 August 2026

Mr Nick Rowley
Chair
Net Zero Commission

Via email: contact@netzerocommission.nsw.gov.au

Dear Mr Rowley

RE: Call for evidence – New South Wales (NSW) decarbonisation pathways

The Green Building Council of Australia (GBCA) welcomes the opportunity to assist the Net Zero Commission in developing the first set of NSW-specific decarbonisation pathway scenarios (pathways). We note the Net Zero Commission's 2026 Annual Progress Report finds that NSW is cutting emissions, but not fast enough to meet its 2030 and 2035 legislated targets.

GBCA recommends that NSW develops decarbonisation pathways with a strong focus on the built environment. The built environment provides a unique, no-regrets opportunity to decarbonise rapidly and help NSW to meet its 2030 and 2035 targets, while buying time for harder to abate sectors. -In our submission to the Inquiry into the 2024 Annual Report, GBCA commended the work that the Net Zero Commission had already accomplished in a relatively short time and noted the key opportunities for progress. These opportunities remain central to achieving net zero, particularly through accelerating electrification, tackling embodied carbon across the built environment and reducing emissions from refrigerants. GBCA urges the development of decarbonisation pathways which include a deeper commitment to policies and initiatives that will accelerate and/or enhance:

- Energy efficiency upgrades for existing homes and buildings
- Electrification upgrades for existing homes and buildings and all-electric new homes and buildings
- Future-ready building standards and planning systems
- Energy performance ratings and disclosure
- Demand-side energy management opportunities and the electricity sector transition
- Embodied carbon reduction and improved circularity
- Phasing down refrigerants.

The information provided in the attached submission provides recommendations and supporting evidence for policies and initiatives to underpin the critical role the built environment must play if NSW is to achieve its net zero commitments. In particular, we note the discussion paper GBCA released in partnership with AIRAH, Freeze frame: Refrigerants as long-term building infrastructure, which includes recommendations and information to support the development of a clear action plan to phase-down refrigerants.

As well as accelerating emissions reductions, policies focused on the built environment can deliver a range of co-benefits including reduced energy demand and lower energy bills, improved climate resilience and opportunities for a more equitable transition to a net zero built environment. The strongest opportunities exist where regulation and market mechanisms work together. For example, combining minimum standards, disclosure requirements and access to appropriate financial mechanisms to drive energy efficiency and electrification across both new and existing buildings. The NSW Government has set up a strong policy

environment for action, with net zero legislation, the Net Zero Commission, the Consumer Energy Strategy, and longstanding initiatives such as the Energy Savings Scheme, Net Zero Government Operations (formerly Government Resource Efficiency Program), NABERS already in place. However, there are additional actions that the NSW Government can take to help the market overcome barriers and accelerate the decarbonisation of buildings at speed and scale.

GBCA values our ongoing and productive engagement with the Net Zero Commission, including meetings with Commissioners, senior staff and The Hon. Penny Sharpe MLC, NSW Minister for Climate Change, Energy, Heritage and the Environment. We look forward to continuing to work collaboratively with the Net Zero Commission and the NSW Government to help shape and deliver a decarbonisation pathway that is both ambitious and accountable, and that delivers the emissions reduction required to meet NSW net zero commitments. To arrange further discussion, for a briefing on our work to date, or for additional clarification of the points made above, please do not hesitate to contact [redacted]

Yours sincerely

[redacted]

[redacted]

Green Building Council of Australia

About GBCA

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 rate the sustainability of buildings, fitouts and communities through Australia's largest national, voluntary, holistic rating system – Green Star.
- 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.

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
- supporting and rewarding the development and use of sustainable products and materials
- contributing to market transformation and a sustainable economy.

GBCA response to consultation paper

GBCA provides the following information in response to the questions in the consultation paper:

Policies and market mechanisms

1. **What opportunities or barriers could improve the effectiveness of NSW's transition to net zero?**
    a) **What policies or market mechanisms could accelerate emissions reductions in specific sectors or communities? What barriers or opportunities exist for their adoption, including any evidence from businesses, industry and/or comparable jurisdictions?**

We note the Net Zero Commission's 2026 Annual Progress Report finds that NSW is cutting emissions, but not at a pace sufficient to meet its 2030 and 2035 legislated targets. The recommendations within this report demonstrate that there are clear actions for NSW to take, but there is no time to lose in implementing them. The achievement of NSW's 2035 targets will rely on policies that are implemented and/or accelerated within the next couple of years.

The built environment provides a unique, no-regrets opportunity to decarbonise rapidly and help NSW to meet its 2030 and 2035 targets, while buying time for harder to abate sectors. In the Built Environment Ambition report (BEAM) released in September 2025 by GBCA and Property Council of Australia, in partnership with Climateworks Centre, modelling[1] showed that:

- Rapid decarbonisation of Australia's built environment, accompanied by electricity sector decarbonisation (implementing policies aligned with a 1.5°C trajectory), can see annual emissions reduced by 66 MtCO2e by 2035 compared to 2025 levels. This could contribute around a quarter of the emissions reductions needed from energy-using sectors to achieve Australia's 70 per cent target.
- By 2035, this pathway achieves a 93 per cent reduction in annual operating emissions from residential buildings and a 90 per cent reduction from commercial buildings, compared to 2025 levels.
- Reducing emissions quickly is critical to meeting targets – swift emissions reductions in the built environment provides critical time for 'late-to-abate' sectors to ramp up their decarbonisation.

Our analysis confirms that buildings offer a fast and cost-effective way to reduce emissions further and contribute to our energy system's decarbonisation. While Australia's energy system is shifting to renewable sources, immediate, practical action to improve energy efficiency and electrify commercial and residential buildings will be key to unlocking decarbonisation opportunities from building operations.

Implementing policies and initiatives aligned with achieving a 1.5°C trajectory can reduce operational emissions in residential buildings by 93 per cent by 2035 compared to 2025. Abatement achieved through electrification and improving energy performance also offers significant additional whole-of-economy benefits through better health and productivity outcomes, lower energy bills, and avoided energy system costs. Gas use in commercial buildings needs to decline rapidly in favour of electricity to achieve the modelled 90 per cent emissions reduction by 2035 compared to 2025. This decline will be achieved by electrification of large systems used for space heating, ventilation and air-conditioning. Within commercial buildings, NSW and Victoria have the highest gas use and timely reduction of emissions from gas is critical.

The Net Zero Commission's advice to the NSW Government regarding development of the NSW Net Zero Plan to 2035 identified that a critical factor for success of the next Plan would be to employ new policies to incentivise electrification of transport, industry and buildings.

[1] The data and analysis provided by Climateworks Centre uses two sources – AusTIMES and Renovation Pathways.

The advice aligns with GBCA's position and advocacy to date. Despite the progress and leadership of many in the buildings sector, and the fact that technologies needed to decarbonise building operations are already available, additional government action is required to overcome barriers and accelerate the decarbonisation of buildings at speed and scale.

Every Building Counts – For state and territory governments is a policy platform jointly released by GBCA and Property Council of Australia in 2023. It outlines a set of recommendations for governments support the decarbonisation of the built environment. In NSW, action is already occurring in response to many of these recommendations. The range of initiatives in place provide a promising foundation for the transition to net zero, but more is needed to leverage the potential emissions reductions of the built environment. Many of the recommendations provided in this submission are aligned with recommendations in Every Building Counts (the relevant themes of Every Building Counts are noted throughout).

Energy efficiency and electrification are critical

The Australian Sustainable Built Environment Council (ASBEC) report, Unlocking the pathway: Why electrification is the key to net zero buildings and accompanying Technical Report confirms 100% electrification is the lowest cost, fastest emissions reduction pathway for Australia's built environment.

While we recognise the NSW Consumer Energy Strategy encourages and supports electrification in a range of ways, the introduction of building electrification regulations (such as those in the ACT and Victoria) 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, consistent and orderly transition away from fossil gas in homes and buildings

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 security. GBCA produced A practical guide to electrification: For new buildings 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. Please also see A practical guide to electrification: For existing buildings.

We also note that the COP31 Presidency's Action Agenda has been announced with the following targets:

- 35 by 35 – An electrification target to raise share of final energy demand met by electricity from just over 20% today to 35% by 2035
- Halving growth in global waste by 2035
- Resilient Cities target of reducing energy consumption intensity in the building sector by at least 25% by 2035.

A global campaign, Electrify Now, was launched at London Climate Week in June, which aims to mobilise action to achieve the 35 by 35 goal. Australian action is being coordinated by Energy Consumers Australia and the Energy Efficiency Council with support from many leading industry organisations, including GBCA.

EBC theme: 1. Establish a clear, long-term decarbonisation pathway for buildings

NSW achievements and next steps:

GBCA commends the NSW Consumer Energy Strategy which provides a plan with clear actions and targets aimed at supporting households and businesses, including low-income and vulnerable households.

Recommendation 1: GBCA recommends setting a clear path for zero-carbon-ready buildings within the NSW Net Zero Plan to 2035. This should reference the relevant parts of the Consumer Energy Strategy, as well as the NSW Gas Decarbonisation Roadmap (due late 2026). It should also align with other key national policies such as the Updated Trajectory for Low Energy Buildings (and associated Implementation Plan) which has identified promoting efficient electrification as a new priority area of coordinated action and the Built Environment Sector Plan.

Recommendation 2: GBCA recommends that the decarbonisation pathways are developed to provide clear and granular outputs for emissions and opportunities for each sector between now and 2035. This will ensure that the decarbonisation pathways will help to influence policy development and implementation - and investment - that is as effective as possible.

EBC theme: 2. Accelerate building electrification

NSW achievements and next steps:

While National Construction Code (NCC) 2025 did not disallow new gas connections for all new residential and commercial buildings (as recommended in Every Building Counts), it does require commercial buildings to be electrification-ready. This follows the leadership example set by the NSW Sustainable Buildings State Environmental Planning Policy (SEPP). GBCA urges the NSW Government to continue to play a strong leadership role in decarbonising new buildings through planning and regulation, and in ongoing efforts to rebuild inter-jurisdictional alignment on the NCC.

Recommendation 3: The anticipated NSW Gas Decarbonisation Roadmap should signal an end to new gas connections for homes and buildings, set a clear pathway for electrifying the economy, including existing buildings, and support a nationally harmonised approach to phase out fossil gas in existing buildings and appliances.

Recommendation 4: GBCA recommends further expansion of the Home Energy Saver program, plus initiatives for commercial buildings (see Recommendation 3 below) to ensure more households and more existing commercial building owners are supported to electrify.

EBC theme: 3. Use incentives and finance to accelerate adoption

NSW achievements and next steps:

Home Energy Saver and the Energy Savings Scheme (ESS) are excellent initiatives available to NSW households to improve the energy performance of existing homes.

Recommendation 5: GBCA recommends expanding existing initiatives and consideration of additional incentives and mechanisms to support every type of household and building owner – from providing trusted information, to full support for the most vulnerable households and a range of other mechanisms in between, including for commercial buildings.

EBC theme: 4. Strengthen minimum standards and regulatory requirements

NSW achievements and next steps:

Recommendation 6: GBCA urges the NSW Government to maintain an ongoing commitment to a nationally consistent NCC, and regular, appropriate updates in line with the trajectory to net zero and the changes needed to ensure homes and buildings are fit for a future climate. GBCA commends the NSW Government's consistent support and adoption of updates to the NCC to date.

Recommendation 7: GBCA supports the introduction of minimum energy efficiency rental standards (MEERS) in NSW. GBCA commends the NSW Government on its recent commitment to investigating MEERS. The standards should be designed to include apartments as they make up a growing proportion of the rental market. Please see GBCA's submission to the MEERS consultation.

Recommendation 8: GBCA recommends setting a clear pathway to minimum energy performance standards for existing buildings to ensure that we can achieve net zero emissions targets and drive an equitable transition. Strong MEERS legislation and continued support for the Home Energy Ratings scheme will underpin future steps to implement mandatory disclosure of performance standards for existing homes. Continued support for NABERS and expansion of the Commercial Building Disclosure (CBD) program will enable improved energy performance for a wider range of existing commercial building types. The CBD program expansion also highlights Minimum Energy Performance Standards for commercial buildings as an area for development.

EBC theme: 7. Robust rating tools for all building types

NSW achievements and next steps:

Information-based market mechanisms can drive investment decisions and reward better-performing buildings. Please see comments above in relation to 4. Strengthen minimum standards and regulatory requirements.

GBCA commends the NSW Government's ongoing support for expansion of NABERS to all building types and notes the release of the Commercial Building Disclosure (CBD) Roadmap by the Australian Government in late 2025.

Recommendation 9: We urge the NSW Government to support the acceleration of some aspects of the CBD Roadmap to provide stronger market signals for building owners to undertake upgrades and electrification.

Mandatory disclosure has proven highly effective in improving energy performance and influencing investment decisions. Accelerated expansion of the program into some additional commercial building types will extend these benefits. Some building types have allocated a lower priority for expansion in the Roadmap due to lack of a NABERS rating tool, but there are several building types that could be accelerated with appropriate support and application of a simplified energy rating, such as the NABERS Energy Performance Indicator (NEPI). Risks and sector immaturity could be effectively managed through strong engagement with industry.

Integrating the NABERS Renewable Energy Indicator in disclosures and progressing minimum energy performance standards as early as practicable would support continuous improvement across the sector, reduce emissions from poorer-performing assets and provide greater certainty for investors and tenants.

Accelerate the electricity sector transition

The best way to deliver consumers' energy needs and strengthen energy system resilience is through an integrated mix of demand-side and supply-side measures.

EBC theme: 5. Reform energy market settings

NSW achievements and next steps:

The Net Zero Commission's 2024 Annual Report notes that:

Buildings are the largest source of demand for electricity in NSW. They are also currently the largest source of photovoltaic generation and where most EVs are expected to be charged. For this reason, the amount of electricity used in buildings, as well as the timing of demand each day, will have a major influence on the cost and speed at which the electricity and energy sector decarbonises.

As noted in the Net Zero Commission's advice regarding the NSW Net Zero Plan to 2035, the Electricity Infrastructure Roadmap represents only part of what is needed in the electricity sector transition. Action is also needed to accelerate energy development approvals, build sufficient renewable generation and firming capacity to maintain a secure and reliable system, harness Consumer Energy Resources (CER) and reduce electricity costs where possible. The 2026 Integrated System Plan requires significant energy efficiency improvements and peak demand reductions to be delivered quickly. This will rely heavily on opportunities in the buildings sector and buildings-targeted policies.

GBCA urges the NSW Government to:

- **Recommendation 10: Adopt the recommendations from Every Building Counts**
- **Recommendation 11: Continue implementing the Consumer Energy Strategy**
- **Recommendation 12: Develop and implement policies to support commercial buildings to seize the opportunities greater energy flexibility through grid interactivity and load-shifting.**

Please see:

- From net zero to zero: A discussion paper on grid-interactive efficient buildings
- NABERS Energy Flexibility Feasibility Study

Government leadership

EBC theme 6. Use government leadership to create market demand

NSW achievements and next steps:

NSW Government is demonstrating excellent leadership in implementing the Net Zero Government Operations (NZGO) policy which requires Green Star certification for new build projects over $10 million as well as setting a range of other benchmarks to drive decarbonisation of government assets.

Recommendation 13: GBCA encourages the NSW Government to continue implementing the Net Zero Government Operations Policy, sharing learnings and upskilling industry wherever possible. GBCA looks forward to continuing to support NSW Government departments in implementing their responsibilities under this policy.

Recommendation 14: GBCA encourages the NSW Government to continue and expand its commitment to upgrading existing public and community housing stock, as well as the design and delivery of high performance, all-electric new housing.

Recommendation 15: GBCA recommends the NSW Government establish a policy team within the Department of Climate Change, Energy, the Environment and Water (NSW DCCEEW) responsible for coordinating and implementing decarbonisation policies relating to the buildings sector. As noted previously, the NSW Government has a strong policy environment which will help to deliver on an ambitious decarbonisation pathway. Given the recommendation in the Net Zero Commission's advice that decarbonisation of buildings sector be prioritised to achieve legislated emissions targets, a dedicated team responsible for coordination and implementation of policies will be critical for efficient and effective delivery and progress. GBCA commends the work underway in the Consumer Energy Division focusing on community and home programs and we believe that a dedicated team would help to deliver important outcomes for the rest of the buildings sector (see also Recommendation 20).

Embodied carbon and circularity

In 2019, embodied carbon made up 16 per cent of Australia's built environment emissions. As shown in the GBCA and thinkstep ANZ report, Embodied Carbon & Embodied Energy in Australia's Buildings, without intervention this share will balloon to 85 percent in 2050 at a time when Australia – and NSW – must achieve legislated net zero emissions targets. Please also see:

- Our Homes Weigh a Tonne – A call to action and Technical report
- A practical guide to upfront carbon reduction: For new buildings and major refurbishments
- ASBEC's Our Upfront Opportunity: Australia's policy roadmap to reduce upfront embodied carbon in the built environment

GBCA also advocates for driving greater circularity in the built environment. The Australian Government has set a target to double Australia's circularity rate from 4 per cent to 8 per cent by 2035. Within the GBCA Nature Positive Roadmap, we have set a goal to achieve 20% circularity by 2035 on Green Star projects. Improving circularity is a significant opportunity not only to reduce carbon, but to reduce waste and impacts on nature and drive economic opportunities for innovative products and services. Please see:

- Australia's Waste[d] Opportunity
- Nature Positive Roadmap for the Built Environment: Trajectories for new developments

EBC theme: 8. Towards zero embodied carbon

NSW achievements and next steps:

GBCA worked closely with the NABERS team in developing the NABERS Embodied Carbon rating tool which provides industry with a credible and essential framework for measuring embodied carbon in new buildings. We commend the NSW Sustainable Buildings SEPP for including a requirement for commercial buildings to measure and disclose upfront carbon emissions. This is an essential step in raising industry awareness and capacity and a step towards setting the upfront carbon reduction targets we will need to achieve net zero emissions targets.

GBCA also notes the role of Infrastructure NSW in setting the Decarbonising Infrastructure Delivery Policy embodied carbon policy developing key resources that set a consistent framework for measuring embodied carbon emissions in infrastructure. These include the Embodied Carbon Measurement for Infrastructure: Technical Guidance and the National Embodied Carbon Databook and guidance.

Recommendation 16: GBCA recommends that the NSW Government share its achievements of lower embodied carbon on government projects, and key lessons learnt.

Recommendation 17: GBCA recommends that NSW Government consider adopting the Australian Government's circularity target or adopting its own.

Refrigerants

Australia has more than 62 million refrigerant-using devices, containing 100 MtCO2e of refrigerant.[2] If released to atmosphere, this is equivalent to around 25% of Australia's total emissions in 2024.[3] This is the second-

[2] https://www.dcceew.gov.au/environment/protection/ozone/publications/cold-hard-facts-4
[3] https://www.abs.gov.au/statistics/measuring-what-matters/measuring-what-matters-themes-and-indicators/sustainable/emissions-reduction#:~:text=In%20the%20year%20to%20December,target%20under%20the%20Paris%20Agreement).

largest and fastest growing source of emissions in the built environment since 2005 and according to the Net Zero Commission's 2026 Annual Report, refrigerants are the source of 38% of the NSW built environment's direct emissions (3% of total state emissions). Australia is committed to phasing down bulk Hydrofluorocarbon (HFC) imports by 85% by 2036[4] and NSW's decarbonisation pathways must include development of a clear regulatory framework to support low-impact refrigerant use, including in new and existing buildings.

GBCA and AIRAH released the discussion paper, Freeze Frame: Refrigerants as long-term building infrastructure which includes recommendations for supply chains, industry and government.

Recommendation 18: GBCA urges the NSW Government to consider these recommendations in further developing a clear plan for action on refrigerants:

- Raise awareness among building owners and designers and build skills across the workforce to support low-impact refrigerant use.
- Improve and create new standards of accounting for refrigerant use and impacts.
- Increase investment by supply chain in future-proof systems using lower harm refrigerants and solutions for transitioning existing equipment.
- Enhance recovery and destruction of refrigerants (currently estimated at <20%) through effective stewardship.
- Establish direction for the built environment through a clear regulatory framework, roadmap, and targets.

GBCA also recommends that the NSW Government commit to:

- **Recommendation 19: Further research and analysis to provide greater granularity of refrigerant emissions and projected rates/opportunities for phase-down in NSW, and making this data publicly available.**
- **Recommendation 20: Resourcing a team within the NSW Government deliver this work and develop and implement ongoing policy in coordination with other decarbonisation initiatives for the built environment (please also see Recommendation 15).**

Data centres

Given the projected rapid growth in this asset class and its associated energy and water needs, data centres should be specifically identified in the development of decarbonisation pathways. GBCA commends the work of Infrastructure NSW in proposing a principles-based approach to engage with industry on the opportunities and challenges of data centre investment growth. GBCA is committed to working with industry and government to help chart a path for development of standards for how data centres will use energy, water and land, manage impacts on air quality, noise pollution and local communities, and make contributions to the economy, jobs and skills, renewable energy and water infrastructure, reducing upfront carbon and improving circularity.

b) How could the NSW Government better stimulate private finance at the scale and pace needed for the net zero transition?

Private finance is stimulated by giving investors policy and regulatory certainty, together with confidence that decarbonisation of buildings is required, measurable and investable.

The Investor Group on Climate Change (IGCC) recently released the State of Net Zero Investment 2026 report which showed that investor appetite for climate solutions opportunities is increasing while almost three-quarters of respondents report no progress in removing barriers to climate-aligned investment in the past

[4] https://www.dcceew.gov.au/environment/protection/ozone/hfc-phase-down/hfc-phase-down-faqs

year. These barriers include a shortage of climate and clean energy investment opportunities with appropriate risk-return profiles and policy and regulatory uncertainty.

As noted in the response to Q1.a) (Recommendation 1) above, **GBCA recommends setting a clear path for achieving zero-carbon-ready buildings within the NSW Net Zero Plan to 2035, and beyond, to provide industry with greater confidence for investment.**

Please also see the Australian Sustainable Finance Institute (ASFI) report for Department of Climate Change, Energy, the Environment and Water, Unlocking Finance and Investment for the Decarbonisation of Commercial Buildings.

c) What are the drivers and risks to reaching NSW's interim targets in 2030 and 2035, and net zero by 2050?

The key drivers for reaching NSW's 2030, 2035 and 2050 targets include rapid grid decarbonisation, electrification of building energy use, improved energy efficiency, better demand management, and reductions in embodied carbon across construction supply chains.

The built environment can and should do more, sooner, for a range of reasons including:

- Every inefficient or fossil-fuel-dependent building constructed today locks in avoidable emissions, higher costs and future retrofit complexity.
- The technologies and skills already exist for decarbonising buildings (operational emissions).
- Supporting buildings to move quickly to meet their decarbonisation potential buys time for harder to abate sectors.

The principal risks are delayed implementation, fragmented policy, insufficient workforce capacity, supply chain constraints, affordability pressures, and failure to address existing buildings at sufficient scale. There is also a risk that progress focuses too narrowly on operational energy-related emissions while overlooking refrigerants, embodied carbon, materials, transport connections and urban form.

NSW can reduce these risks by setting a clear trajectory for building performance, phasing out avoidable fossil fuel use in buildings, strengthening data and disclosure, supporting skills development, and aligning planning, infrastructure and housing policy with net zero outcomes.

Technology and behaviour change

2. **What are the opportunities and barriers to technology development, deployment for each sector? This may include:**
    a) **What technologies are available or emerging in your sector, and what is their current state of readiness?**

The built environment has proven technologies to cut operational emissions, such as efficient electric heat pumps, induction cooking and rooftop solar to batteries, smart meters, EV charging, demand management technologies and virtual power plants. As noted, the NSW Consumer Energy Strategy's focus on households and small businesses recognises their critical role in decarbonisation as well as helping to ensure an equitable transition to a net zero economy. A key priority should now be deploying these solutions as integrated building upgrades, not isolated measures, so households and commercial building users gain lasting comfort, health, cost-saving and emissions benefits.

Reducing embodied carbon faces more technological barriers than operational emissions. It is critical to address these as the share of embodied carbon will continue to grow proportionately larger. Please see Material and Embodied Carbon Leader's (MECLA) submission to this consultation for more information.

b) What constraints exist around technology uptake and deployment?

The main constraints on technology uptake are not the availability of solutions, but the ability of households, businesses and building owners to access the right information for decision-making and to finance them at scale. Upfront costs, split incentives between owners and tenants, strata decision-making barriers, inconsistent information, workforce capacity, supply chain constraints and low consumer confidence can all slow adoption. These barriers are particularly acute for renters, low-income households, apartment residents, small businesses and regional communities, who may face higher costs or have less control over building upgrades.

NSW can reduce these constraints by building on the Consumer Energy Strategy's focus on practical resources, trusted advice, incentives, installation quality and consumer protections and linking this to a clear and cohesive path for achieving zero-carbon-ready buildings.

c) What does the evidence say about current and future costs?

The evidence is clear that improving energy efficiency and electrifying buildings are among the most cost-effective emissions reduction opportunities available to NSW. Energy efficiency measures in buildings could deliver substantial savings for households and businesses and avoid significant emissions, while electrifying the built environment could deliver even larger cumulative energy savings compared with business as usual.

These benefits are strongest when upgrades are sequenced well: improving the building fabric and appliance efficiency first reduces peak demand and allows electrification, solar, batteries and consumer energy resources to deliver greater value.

Please see:

- Built Environment Ambition report
- Unlocking the pathway: Why electrification is the key to net zero buildings

d) What role could the NSW Government play in strengthening technology development and deployment?

As noted above, the NSW Government has a critical role to play in supporting households and businesses to access technologies to assist in improving energy efficiency and electrification.

NSW should also continue to use public procurement, social housing investment and government-owned assets to lead the market, demonstrate best practice and build industry capability. This will help ensure technology deployment lowers bills, reduces emissions, improves resilience and shares the benefits of the transition equitably.

3. What are the opportunities to foster demand reduction and behaviour change?

Demand reduction should be treated as a pillar of NSW's net zero pathway. In the built environment, reducing demand through better building fabric, efficient appliances, smart controls, passive design and grid flexibility lowers household and business bills, reduces pressure on the grid, and makes electrification more affordable. Behaviour change can support these outcomes, but it should not rely on consumers carrying the burden alone; buildings, markets and government policies should make the efficient, low-carbon choice the easy and attractive choice.

GBCA commends the work the NSW Government has done to support the development and roll out of the Home Energy Rating program, which is a critical tool for empowering consumer decision-making regarding energy performance of existing homes.

The measures detailed in the response to Q1a) can help households and businesses understand and manage energy use, shift demand away from peak periods, participate in virtual power plants, and share in the financial, health and resilience benefits of a cleaner energy system.

Economic impacts and just transition

4. **What are the likely economic effects on NSW of different emissions pathways to net zero, relative to NSW's current level of ambition?**

A higher-ambition emissions pathway for NSW is likely to deliver stronger long-term economic outcomes than a delayed or incremental pathway, particularly in the built environment where many solutions are available today. Investing in improving energy efficiency, electrifying buildings and scaling consumer energy resources can reduce energy bills, improve productivity, strengthen energy resilience and create demand for skilled jobs and local supply chains.

The BEAM report analysis reinforces that the built environment is a "no-regrets" sector for early action. With the right policy settings, it can deliver rapid emissions reductions, lower household and business energy costs, and reduce pressure on harder-to-abate sectors. Every year of delay increases the risk that households and businesses face higher energy bills, that new buildings lock in avoidable emissions, and that future retrofits become more expensive and disruptive.

By contrast, a slower pathway would defer savings, increase exposure to volatile fossil fuel prices, and leave more homes and workplaces inefficient, unhealthy and expensive to run. It would also risk a disorderly transition in which policy, workforce and supply chains are forced to catch up later at greater cost. NSW's current ambition should therefore be strengthened through clear, staged policy settings that make efficient, all-electric and low-carbon buildings the mainstream market expectation, supported by targeted assistance so low-income households, renters, apartment residents, small businesses and regional communities can share in the benefits.

a) **What are the most significant economic or workforce pressures the pathways should account for in your sector or community**

The most significant economic and workforce pressures for the built environment arise from the scale and speed of the retrofit task, the need to electrify homes and commercial buildings, and the requirement to reduce embodied carbon while maintaining housing supply and affordability.

Workforce pressures include shortages in skilled trades, energy assessors, designers, engineers, sustainability professionals and installers able to deliver efficient, all-electric, low-carbon buildings at scale. The NSW Government should take every opportunity to align skills, housing, energy and industry policy, including targeted training for heat pump installation, building fabric upgrades, energy performance assessment, electrification, refrigerants management, low-carbon procurement and embodied carbon measurement.

5. **What are the opportunities and barriers to addressing socio-economic priorities for a just transition, including equitable outcomes for First Nations peoples and rural, regional and remote communities?**

A just transition in the built environment should ensure that the benefits of energy efficiency, electrification and clean energy are shared fairly, particularly with First Nations peoples, low-income households, renters, social housing residents, apartment communities and rural, regional and remote communities. Climate action should deliver healthier, more resilient and more affordable places for people, not simply reduce emissions. This means prioritising upgrades where energy hardship, poor housing quality and climate exposure are greatest, including through social housing retrofits, rental minimum standards, culturally appropriate community engagement, and place-based programs that support local jobs and capability.

NSW should embed early, genuine and ongoing partnership with First Nations peoples in programs for decarbonising the built environment, recognising connection to Country, cultural knowledge and community-led priorities. Unlocking opportunities, such as First Nations-led clean energy and housing

upgrades, local jobs, procurement pathways and better support for remote communities, requires building trust and genuine connections.

Evidence and other considerations

6. **What evidence can you provide to inform pathway inputs and assumptions? For example, cost curves, deployment rates, or sector-specific data, include commercially sensitive data where relevant.**

The BEAM report provides strong evidence that decarbonising the built environment is a near-term, no-regrets opportunity for NSW and Australia because the core deployment pathways are already clear: improve energy efficiency, electrify building energy use, scale rooftop solar, batteries and flexible demand, and reduce embodied and lifecycle emissions over time. Deployment assumptions should therefore reflect that much of the required technology is commercially available today, but that uptake depends on policy certainty, consumer support, finance, workforce capacity and coordinated delivery.

BEAM reinforces that earlier action is more cost-effective than delay. However, the report also points to barriers that pathway modelling should not understate, including upfront retrofit costs, split incentives, limited building performance data, supply chain constraints, skills shortages, apartment and strata complexity, and the need to sequence upgrades so efficiency, electrification and consumer energy resources work together.

7. **Beyond emissions reduction, what outcomes should be considered? For example, impacts on business, jobs, land-use, water and biodiversity.**

Beyond emissions reduction, NSW's pathways should explicitly value the broader economic, social, environmental and system benefits that flow from decarbonising the built environment and other sectors. Decarbonising buildings is also an opportunity to lower energy bills, improve health and comfort, strengthen energy resilience, create skilled jobs, reduce pressure on the electricity system, and support a more orderly transition for harder-to-abate sectors.

Pathway design should also account for land-use, water, biodiversity and nature outcomes. GBCA's Nature positive roadmap for the built environment: Trajectories for new developments makes clear that the built environment must move beyond minimising harm to actively protecting, restoring and regenerating nature. It identifies priorities including preventing further nature loss, restoring and reconnecting ecosystems, increasing circularity and urban infill, choosing lower-impact materials, and investing in nature restoration. These outcomes are directly connected to decarbonisation:

- compact, connected and well-designed communities can reduce transport emissions and infrastructure costs
- circular design can reduce waste and embodied carbon
- urban greening can reduce heat, improve liveability and support biodiversity
- water-sensitive design can improve resilience while protecting ecosystems.

Decarbonisation pathways should be developed with a broader set of public value outcomes, including affordability, health, productivity, workforce development, regional resilience, First Nations partnership, circular economy outcomes, nature repair and avoided future costs.