green building council australia

Building a sustainable future

Committee Secretary
Senate Standing Committees on Environment and Communications
PO Box 6100
Parliament House
CANBERRA ACT 2600

18 August 2017

Dear Committee Secretariat,

RE: CURRENT AND FUTURE IMPACTS OF CLIMATE CHANGE ON HOUSING, BUILDINGS AND INFRASTRUCTURE

The Green Building Council of Australia (GBCA) welcomes the opportunity to make this submission to the Senate Standing Committees on Environment and Communications into the current and future impacts of climate change on housing, buildings and infrastructure.

Throughout 2017, the GBCA has made a number of submissions to government considering and providing recommendations on the challenges faced by the built and urban environment across a number of issues including the impacts of climate change. It is imperative that this Inquiry considers the findings and recommendations being progressed through:

- The Independent Review into the Future Security of the National Electricity Market (Finkel Review)
- The Australian Energy Regulator on Demand Management Incentive Scheme and Innovation Allowance Mechanism
- The Department of Environment and Energy consultation on a draft standard for Carbon Neutral Buildings and Precincts
- The Australian Government Department of Environment and Energy Federal Climate Change Policy Review
- The House of Representatives Standing Committee on the Environment and Energy Inquiry into Modernising Australia's Electricity Grid
- The House of Representatives Standing Committee on Infrastructure, Transport and Cities into the Australian Government's role in the development of cities
- Inquiry into the Commonwealth Procurement Framework
- Smart Cities and Suburbs Program Draft Guidelines

This submission provides comment on the below Terms of Reference (TOR) and outlines the ways in which the GBCA, its members and the wider property and construction industry are reducing the current and future impacts of climate change on housing, buildings and infrastructure to achieve Australia's emissions reduction targets, support low emissions innovations and deliver transformation across the industry:

- The impact of these changes on the vulnerability of infrastructure in coastal areas
- The impact of these changes on water supply and sewage treatment systems
- The impact of these changes on transportation, including railways, roads and airports
- The impacts of these changes on energy infrastructure, including generators and transmission and distribution lines

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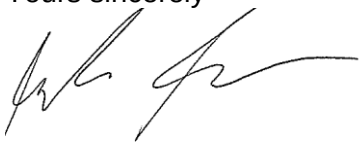
- The impact of these changes on health, education and social services infrastructure, including hospitals, schools and aged care
- The impact of these changes of private and public housing
- The impact on financing and insurance arrangements for housing, buildings and infrastructure
- The adequacy of current state and Commonwealth policies to assess, plan and implement adaptation plans and improved resilience of infrastructure.

As always, the GBCA welcomes opportunities for further collaboration and consultation. Please do not hesitate to contact me via email at luke.farr@gbca.org.au should you require any further information, or to discuss any of the issues raised in this submission.

Yours sincerely



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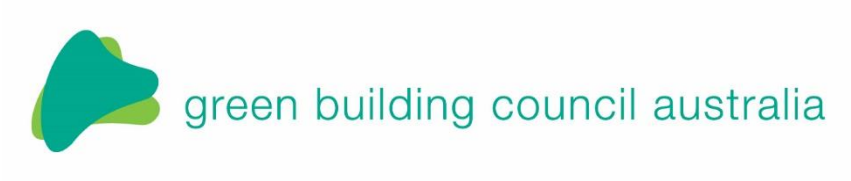

Current and future impacts of climate change on housing, buildings and infrastructure

Submission

August 2017

green building council australia

Established in 2002, the Green Building Council of Australia (GBCA) is the nation's authority on sustainable buildings, communities and cities. Our vision is to create healthy, resilient and positive places for people and the natural environment. Our purpose is to lead the sustainable transformation of Australia's built environment. To do this, we:

- Rate the sustainability of buildings and communities through Australia's only national, voluntary, holistic rating system - greenstar
- Educate industry and government practitioners and decision-makers, and promote green building programs, technologies, design practices and operations
- Advocate policies and programs that support our vision and purpose.

The GBCA represents 600-plus individual companies with a collective annual turnover of more than $40 billion.

Our membership reflects the diversity of Australian business with over 500 small-to-medium enterprises through to 75 companies with annual turnover of more than $100 million and 24 companies now listed in the ASX200, with a combined market capitalisation of more than $620 billion. Members include major developers, professional services firms, banks, superannuation funds, product manufacturers, retailers and suppliers. We also have 44 local government, 26 state government departments and land organisations, and 18 university members.

GBCA company members alone employ more than 50,000 staff across Australia. Our professional development program boasts over 1,200 people advancing their careers and building their skills through their membership with the GBCA.

greenstar

Launched by the GBCA in 2003, as Australia's only national, voluntary and holistic rating system for sustainable buildings and communities, Green Star is an internationally recognised built environment rating system. The Green Star rating system has been developed by Australian industry and locally adapted to suit the Australian market. From individual buildings to neighbourhoods, precincts and entire communities, Green Star is transforming the way our built environment is designed, constructed and operated.

There are over 1460 Green Star-rated projects across Australia:

- 37% of Australia's CBD office space is Green Star certified
- 5% of the workforce head to a green office each day
- 40,000 people live in Green Star-rated apartments
- 170,000 people are moving into Green Star communities – this is double the size of Toowoomba, Australia's 13th largest city
- 1.3 million people visit a Green Star-rated shopping centre each day
- Green Star certified buildings, on average: produce 62% fewer greenhouse gas emissions and use 66% less electricity than the average building; 51% less potable water than minimum industry requirements; and recycle 96% of their construction and demolition waste.

CONTENTS

1. The impact of these changes on health, education and social infrastructure, including hospitals, schools and aged care and private and public housing

With Australia's commitments in Paris to reduce our emissions to limit global warming to below 2˚C there can be no delay to policies and programs that will help deliver that goal. In this context, the GBCA is committed to mitigating the effects of current and future impacts of climate change and delivering a low carbon, high performing built environment. We note:

- Buildings currently account for almost 25 per cent of our national emissions.
- Using existing technologies, buildings could **contribute up to one tenth of our 2030 emissions target** through energy efficiency measures and **contribute more than a quarter of our 2030 emissions target** with high levels of uptake of distributed energy.
- Buildings could **contribute to meeting more than half of our energy productivity target**.

The GBCA is pleased to be a member of the Australian Sustainable Built Environment Council (ASBEC), the peak body for organisations committed to a sustainable built environment. ASBEC's members bring a united industry voice and a wealth of expertise to creating solutions to policy challenges to assist in mitigating the effects of a changing climate. ASBEC's report, *Low Carbon, High Performance (2016)*, authored by ClimateWorks Australia, details the extent of the built environment's potential and makes 32 recommendations for this potential to be realised. These can be summarised into five key areas:

1. A national plan with supporting policy frameworks and governance arrangements, including long-term and interim targets, clear responsibility at a Ministerial level, coordination of action across different levels of government and different government departments and agencies and public reporting requirements
2. Mandatory minimum standards for buildings, equipment and appliances with a future trajectory aligned with the long-term goal of net zero emissions
3. Targeted incentives and programs to motivate and support higher performance in the short- to medium-term, including incentives, the use of government market power and targeted programs and support
4. Energy market reforms to ensure that the energy market supports roll-out of cost-effective energy efficiency and distributed energy improvements
5. A range of supporting data, information, training and education measures to enable informed consumer choice, and support innovation, commercialisation and deployment of new technologies and business models.

As well as making recommendations for new policies and initiatives to seize opportunities, *Low Carbon, High Performance* details ways in which current policies can be improved and enhanced, particularly in regard to the Emissions Reduction Fund (ERF), National Energy Productivity Plan (NEPP), raising minimum standards and distributed energy policy. These points are discussed when addressing the *adequacy of current state and Commonwealth policies* within the TOR.

Case study: Hopkins Street Affordable Housing

The 5 Star Green Star Hopkins Street Affordable Housing development consists of 22 two-bedroom and 8 one-bedroom units and supports a community of diverse tenants drawn from the public housing list. The design is flexible, accessible, sustainable and affordable, with a wide range of amenities and facilities provided, and unlike many social housing projects, Hopkins Street was created with a real community at its heart.

The Hopkins Street Affordable Housing development delivers a model of energy efficient housing that reduces the strain on our environment and the financial stress on household income, through significantly reduced energy bills for occupants.

The development was required to achieve 6 star NatHERS ratings for all units. Through maximisation of energy efficiency, via efficient heating, solar hot water systems, effective insulation and photovoltaic panels for communal power needs, all units achieved a minimum energy rating of 7.3 stars, with three apartments achieving 8.1 stars.

Indoor environment quality is extremely important within residential developments, where people spend much of their time indoors. The indoor environment at Hopkins Street is designed to be sustainable and healthy through both active and passive means.

The units are dual aspect, compact, efficiently planned and overlook a shared landscaped courtyard. This design maximises natural daylight and cross flow ventilation throughout the apartments wherever possible. This helps to ensure the air is kept clean and reduces the potential for mold and bacteria growth. The design includes low-VOC emission paints, sealants, adhesives, and flooring as well as low-formaldehyde wood products.

1.1 Carbon Positive

To assist the built environment and property and construction industry to play its part in achieving Australia's emission reduction targets and to keep global warming within 2 ˚C, the GBCA recently released a discussion paper, *A carbon positive roadmap for the built environment*. The discussion paper sets the scene for a 1.5˚C future, outlines potential priorities for the industry, and the roadmap for action, such as defining carbon neutral buildings and precincts.

It also endorses the following targets:

- All new buildings must be net zero by 2030
- All existing buildings must be net zero by 2050.

Our goal is to build a carbon positive future that is healthy, productive and resilient through cost-effective and achievable actions. To do this, we will be working with industry to achieve the following priorities:

1. Promote energy efficiency – driving quality design first, and efficient systems next
2. Drive investment in resilient, renewable, energy infrastructure in Australia
3. Increase markets for net zero carbon products, materials, and services
4. Promote offsets for any remaining emissions.

We believe that this approach is a cost-effective pathway for buildings and portfolios, and will also achieve collective co-benefits for Australia in the transition to a net zero future. We believe the above priorities can support the following outcomes:

- Efficient, comfortable and healthy buildings running on renewable energy
- A connected, resilient, renewable grid infrastructure and industry that will deliver energy, security, jobs, economic benefits and social transformation in cities and regional areas
- Successful industries delivering net zero embodied energy materials, products and services
- Enhanced outcomes from strategic offset investment.

Case study: The New Royal Adelaide Hospital

The 292,000 square meter New Royal Adelaide Hospital (RAH) achieved 4 Star Green Star certification and in doing so became the first entire hospital to achieve a Green Star rating.

The 800 bed RAH will be the state's flagship hospital, providing a comprehensive range of clinical care to an estimated 85,000 inpatients and 400,000 outpatients each year.

The emotional and physical needs of patients, their loved ones and carers are at the heart of the RAH, driving its creation from conception right through to construction.

A strong focus on natural light and environment combine with 100 per cent single overnight patient rooms to create the best possible healing environment with greater levels of privacy, comfort and infection control, as well as an emphasis on outdoor space, internal gardens and access to views.

The RAH is aiming to be technologically advanced, including using robots for delivering supplies, equipment and food and has set a target of 50 per cent reduction in greenhouse gas emissions compared to other hospitals.

Case study: Williamstown High School

In 2005, the Department of Education, the Victorian Government and the local school community committed $11 million to redevelop Williamstown High School as a model for environmentally sustainable education and as a result achieved 5 Star Green Star certification.

Research has shown that green schools can improve student performance across all academic fields, including increasing student progression by 20 per cent in mathematics and 26 per cent in reading, while improving student health by 41.5 per cent.

The investment has delivered a high quality and cost-effective development, which provides a better and healthier learning environment for students and teachers. The cost of $2,075 per square metre, which included all site works and the fitout, was within a standard school build budget, demonstrating that green schools can be good for the heart strings and the purse strings.

During the project, native wetlands in the area were rehabilitated and extended, and a Marine Education Centre constructed. The wetland has been planted with indigenous coastal flora, and provides a valuable additional environmental benefit by retaining and cleaning storm water runoff, thereby improving the quality of water entering Hobsons Bay and reducing the need for extra stormwater infrastructure. The wetland and Marine Education Centre also provide a new and unique learning resource for the school and the local community and improve the amenity of the surrounding area.

Interactive metering, solar hot water systems and rainwater collection systems are some of the energy and water-saving features that can be found at Williamstown High School. Not only do these features deliver a 90 per cent reduction in the use of potable water and a 35 per cent reduction in energy consumption, they have also attracted a regular flow of principals and company executives through the school to see first-hand what smart, sustainable design can achieve.

2. The impacts of these changes on the vulnerability of infrastructure in coastal areas; water supply and sewerage treatment systems; transportation, including railways, roads and airports; and changes on energy infrastructure, including generators and transmission and distribution lines

Energy efficiency can reduce energy consumption in buildings by more than half by 2050, while fuel switching can eliminate most non-electric energy consumption. Remaining emissions from electricity consumption in buildings can be eliminated through the production of zero emissions electricity.

If Australia is to meet its international commitments to achieve zero net emissions, a transformation of the electricity supply sector will be required. This means that achieving zero emissions buildings is likely to involve a combination of distributed solar PV, as well as decarbonisation of grid-supplied electricity.

Case study: Brisbane Airport

Brisbane Airport Corporation (BAC) achieved the first Green Star – Communities rating for the entire Brisbane Airport site, comprising 2700 hectares of land, which will eventually house more than 50 commercial office, mixed use, retail and industrial buildings.

The Green Star – Communities rating provides BAC with independent verification and global recognition for its vision and commitment to sustainable development that proves to the community that the airport precinct is being planned and designed to deliver environmental, economic and social sustainability.

Brisbane Airport's entire site has been assessed against benchmarks for liveability, economic prosperity, environmental sustainability, design excellence, governance and innovation. The project team was rewarded for developing policies that address corporate social responsibility and provide public sustainability reporting on environmental, social and economic impacts.

2.1 Value of Green Star

In 2012, the GBCA conducted a study of data from Green Star-certified buildings in order to quantify the overall impact of the rating system on greenhouse gas emissions, operational energy usage, operational water consumption and construction and demolition waste. The study compared data from 428 Green Star-certified projects with buildings that just meet average or minimum practice standards. The methodology and findings have been peer-reviewed for accuracy by independent consulting firm Net Balance. A copy of the *Value of Green Star: A Decade of Environmental Benefits, Research Key Findings (2013)* report can be found here for further information. Key findings of the report include:

- On average, Green Star-certified buildings produce 62 per cent fewer greenhouse gas emissions than average Australian buildings
- On average, Green Star-certified buildings use 66 per cent less electricity than average Australian buildings
- On average, Green Star-certified buildings use 51 per cent less potable water than if they had been built to minimum industry requirements.

The higher the Green Star-certified rating of a building the greater the environmental savings across all key areas – greenhouse gas emissions, energy use, water consumption and construction and demolition waste.

Case study: Central Park

The Central Park development on the edge of Sydney's CBD is set to become one of Australia's largest developments powered by its own tri-generation energy plant, as well as hosting one of the biggest membrane bioreactor recycled water facilities in the world. This facility is realising the benefits of a precinct-scale approach to utilities, with more than 5,000 residents halving their usage of drinking water, while also saving money and valuable resources.

Central Park will also have its own low-carbon natural gas power plant to provide heating and cooling for the community. This system has the potential to reduce greenhouse gas emissions by up to 190,000 tonnes over the 25 years. While the opportunities to reduce resource use within the precinct are significant, efforts to export energy offsite to other buildings in the area to gain further efficiencies have been blocked by regulatory restrictions.

2.2 District Scale Utilities

It is widely acknowledged that Australia's complex utility market and regulatory environment imposes barriers to innovation and alternative utility infrastructure and supply. For example, the recent draft ruling by IPART on prices for wholesale water and sewerage services risks destroying an optimistic and highly innovative water services industry in NSW. This is due to a blinkered regulatory focus that fails to account for broader social and environmental benefits associated with new technology and services. The GBCA advocates for the removal of market barriers to district-based utilities and calls for a fair tariff structure and value for distributed utility solutions.

The GBCA is proud to be working across industry to establish a stronger industry voice for district-based utilities and shared services alongside prosumers. The GBCA looks forward to engaging with all spheres of government on these issues to identify and realise opportunities for removing barriers and implementing innovative solutions. While the opportunities to reduce emissions, reduce running costs, build resilience and deliver a range of environmental, social, health and economic benefits by improving buildings are substantial, the opportunities are exponentially greater when we take an infrastructure-, community-, or city-level approach.

2.3 City Deals

The Government has an unprecedented opportunity to leverage sustainable outcomes through the Smart Cities Plan and City Deals program. The Australian industry knows how to deliver world-class outcomes in buildings and precincts, and City Deals provide an opportunity to catalyse this knowledge and expertise in large-scale projects across the country. The GBCA encourages the Government to commit funding to opportunities that will deliver best practice outcomes and require planning and infrastructure decision-making to deliver positive environmental, social and economic outcomes.

Benchmarking and measurement will be vital in ensuring desired outcomes and targets are met. Green Star has been used extensively across Australia for community and precinct-scale projects to demonstrate how these projects are delivering not just on environmental impacts, but also liveability, economic prosperity, governance and innovation.

The Green Star – Communities rating tool assists governments, development project teams, contractors and other interested parties aiming to deliver large-scale sustainable developments around Australia.

Due to the holistic nature of its credits, the Green Star – Communities rating system provides established metrics to measure and communicate the outcomes sought at a community and project level through City Deals. The table below summarises each of the five principles underpinning Green Star – Communities as they align with the City Deals model:

Category	Metric for City Deals
Visionary Leadership and Governance	Recognises developers and developments that demonstrate: • sectoral leadership by establishing and maintaining strong governance practices • engagement, transparency, and community and industry capacity building.
Liveability	Recognises developments that deliver: • safe, accessible and culturally-rich communities • healthy and active lifestyles • high level of amenity, activity and inclusiveness
Economic Prosperity	Recognises developments that promote: • prosperity and productivity • affordable living and housing • investment in education and skills development • facilitation of community-capacity building • greater productivity via emerging opportunities in the digital economy
Environment Responsibility	Recognises developments that promote: • reduced negative impacts on sensitive ecosystems and the natural environment (land, water and atmosphere) • resource management and efficiency by promoting infrastructure, transport, and buildings • reduced ecological footprints
Design Excellence & Innovation	Recognises developments that encourage: • spread of innovative practices, processes and strategies that promote sustainable communities and cities

*Adapted from the Commonwealth Governments Smart Cities Plan

Case study: Barangaroo South

Barangaroo South, developed by Lendlease, achieved a 6 Star Green Star – Communities rating representing 'world-leadership' in the design and delivery of sustainable communities. Barangaroo South is targeted to become Australia's first large scale carbon neutral community. Barangaroo is one of only 17 projects globally to be part of the C40 Cities-Clinton Climate Initiative's Climate Positive Development Program.

The precinct is capable of being water positive, with an on-site blackwater treatment plant capable of supplying one million litres of recycled water a day to the precinct and surrounding suburbs. Barangaroo is also targeting zero net waste to landfill by 2020.

Upon completion, Barangaroo South will become home to around 1,500 residents, there will be next generation office space for 23,000 workers, more than 80 new retail outlets and over 50 per cent of the precinct will be open public spaces for everyone to enjoy.

Case study: Tonsley Innovation District

When Tonsley's masterplan was being developed back in 2012, the South Australian Government set a clear brief for the site. The former manufacturing park was to become a sustainable centre for innovation and productivity, drawing workers, developing high-value industries and contributing to the state's economic success. Fast forward to 2015 and Tonsley Innovation District was Australia's first mixed-use urban redevelopment to be awarded 6 Star Green Star – Communities certification.

To achieve these goals, Tonsley needed to incorporate the right mix of uses, and to facilitate connections between people, businesses and educational institutions. Adaptive reuse of existing infrastructure helped to do this by creating a central hub of activity for the community and plenty of opportunities for social and commercial interaction.

While planning Tonsley, the project team created a *Site Wide Built Form Development Manual* and site-specific *Urban Design Protocol* to ensure all buildings adhere to the sustainability and liveability vision for the site – and in doing so has set new benchmarks for sustainable urban renewal in Australia.

The former Mitsubishi Main Assembly Building (MAB) was retained and re-purposed, preventing the loss of approximately 90,000 tonnes of carbon emissions in its original construction. Once complete the MAB will house a range of flexible modular pod tenancies occupied by small to medium businesses from the high-value manufacturing sector while incorporating retail outlets, meeting areas, education spaces and a number of forests and plazas.

Education and research are true cornerstones of the Tonsley Innovation District masterplan, with Flinders University and TAFE SA signing up as anchor partners in the development.

Tonsley's masterplan also incorporates approximately 11 hectares of residential space, which will eventually be home to around 1,200 people. Creating homes will ensure the district remains active outside of business hours, and give the opportunity for those who work or study at Tonsley to live close by. The train station is at the doorstep of the residential area, with new electric trains meaning faster, more frequent and cleaner journeys to the city. The result? Fewer transport emissions and a cohesive community identity.

Over the coming years, Tonsley will become firmly established as an economic growth engine for South Australia as the district reaches a critical mass of industry, research, education and commercial activity collocated on the site.

3. The impact on financing and insurance arrangements for housing, buildings and infrastructure; and the adequacy of current state and Commonwealth policies to assess, plan and implement adaptation plans and improved resilience of infrastructure

The GBCA's 600 plus member organisations choose to deliver environmentally sustainable projects, not just because it is the right thing to do, but because environmentally sustainable buildings and communities deliver cost benefits, mitigate and reduce exposure to the risks of a changing climate, contribute to national and global emissions reduction targets and deliver social and health benefits to occupants and users. Government cannot afford not to do the same.

Industry continually finds ways to reduce costs throughout the whole procurement process and supply chain, while delivering high quality outcomes. In the 15 years since the GBCA was established, its members have driven change that has led to many products and practices that were virtually unheard of then, to now be commonly and cost-effectively available. Many of those early leaders and adopters have been governments; federal, state and local. The impact of visionary government leadership on driving change cannot be underestimated.

3.1 National Construction Code

Australia is fortunate to have a National Construction Code (NCC), which allows a consistent and nation-wide approach to construction regulation. While safety is the primary focus of the NCC, the opportunity to improve energy efficiency in buildings is invaluable.

While energy efficient design and technology continues to improve – with many buildings in Australia now energy neutral or energy positive – the minimum standards prescribed in the NCC have not been updated since their introduction in 2010. The gap between minimum practice outlined in the NCC and best practice grows wider by the year. Lifting minimum standards for energy efficiency in the NCC will ensure that new buildings in Australia do not miss opportunities for emissions reduction, as well as creating opportunities to reduce running costs over the life of buildings.

The GBCA is supporting ASBEC in its work with the Australian Building Codes Board to increase stringency for commercial buildings in the 2019 update to the NCC. To ensure future updates to the NCC occur regularly, a trajectory should be established for future energy provisions in the NCC. A shared ultimate goal of net zero emissions for the NCC supported by a trajectory of planned updates over time will encourage innovation and regular upskilling of industry, and deliver more high performing buildings.

3.2 Emissions Reduction Fund

The Emissions Reduction Fund (ERF) is the centrepiece of the Government's suite of policies to reduce emissions and aims to target least-cost abatement opportunities. However, several barriers have prevented the buildings sector – where many low-cost opportunities exist – from accessing the scheme. Only four project contracts awarded under the ERF to date have used the commercial buildings method.

Barriers to entry include:

- A minimum bid size of 2000 tonnes C02-e average abatement per annum. This level of abatement is difficult to achieve for a single building, except for very large, energy-hungry facilities. To access this program, multiple buildings would likely need to be aggregated under one project.
- Given that a successful bid cannot be guaranteed, the uncertainty of the abatement price per tonne, and the high cost of preparing a bid, even building owners with large portfolios find the risk/cost versus return of this program unattractive. Aggregating buildings with multiple owners carries even higher risk.
- A requirement for multi-year contracts means that there is a risk that a building owner may be financially liable if savings do not eventuate.
- The structure of payment is also a barrier to many potential proponents of the ERF program. While credits might be calculated upfront, they will only be generated and paid as abatement is delivered. This will be a significant disadvantage to capital-constrained proponents and could undermine additionality objectives (only those with existing capital will proceed).

To harness the opportunities for low-cost abatement in the buildings sector, adjustments must be made to the ERF. These could include:

- reducing the minimum bid size for buildings
- allowing partial opt-outs for building owners if expected emissions savings are not delivered in a particular year
- allowing for upfront payment where units of emissions reduction can be guaranteed, e.g. lighting upgrades can provide a high degree of certainty of total abatement
- establishing separate auction streams for buildings to reduce uncertainty about the likely price.

3.3 National Energy Productivity Plan

The GBCA applauds the Government on the development of the National Energy Productivity Plan (NEPP). The NEPP details a range of complementary measures that will assist the Australian economy in increasing its energy productivity. The GBCA and broader property and construction industry look forward to working closely with Government to deliver on a range of initiatives outlined in the NEPP work plan. In particular:

- Expand commercial building ratings and disclosure
- Reduce barriers to financing
- Improve energy productivity in government
- Promote leading practice
- Emerging technologies in the electricity system
- Reform governance to keep pace with change
- Advance the National Construction Code.

Many of the initiatives outlined in the NEPP work plan align with those identified in the Low Carbon, High Performance report and the GBCA encourages the Government to continue to consult closely with industry to ensure that programs and initiatives are designed to overcome existing barriers and take full advantage of opportunities.

3.4 National Carbon Offset Standard for Building and Precincts

The GBCA commends the Government on the National Carbon Offset Standard for Buildings and Precincts. We have appreciated the opportunity to have worked closely with the Department of Environment and Energy and the National Australian Built Environment Rating System (NABERS) on developing the Standard, providing clear definitions and voluntary standards for carbon neutrality or 'net zero' emissions for buildings and precincts. The GBCA supports the overarching vision and principles of the Standard and congratulates Government on its commitment to help place Australia on the trajectory towards a zero-carbon economy. Our submission in response to the draft Standard can be read here. The Standard will provide invaluable guidance for industry as it works towards eliminating emissions from buildings and precincts and the GBCA looks forward to continuing a collaborative relationship with the Department as the Standard piloted and further reviewed in the months ahead.

3.5 Renewable Energy Target

As well as contributing to reduced emissions, the Renewable Energy Target (RET) has a positive impact on Australia's economy in a number of ways, including encouraging investment in renewable energy solutions, supporting jobs in the renewable energy sector, and providing opportunities for organisations to integrate renewable energy solutions into their strategies for reducing emissions and reducing exposure to rising energy prices. Changes to the RET and mixed messages from the Australian Government regarding its commitment to, and support for, renewable energy technologies have impacted investment in this sector. Renewable energy must be an expanding part of Australia's energy mix if we are to achieve our emissions reduction targets. If Australia is to remain competitive in a low carbon global economy, it must not miss the opportunity to attract investment into an innovative domestic renewable energy industry.

3.6 Clean Energy Finance Corporation

The GBCA welcomes the commitment by the Government to supporting clean energy innovation via the Australian Renewable Energy Agency, the Australian Research Council, CSIRO, the Clean Energy Finance Corporation (CEFC) and others. Providing opportunities for industry to access finance and funding for projects that will deliver greater energy productivity and efficiency will greatly assist the built environment in achieving its abatement potential.

Case study: Clean Energy Finance Corporation

The CEFC has been working with the GBCA to use Green Star as an independent benchmark for building projects that must demonstrate energy efficiency and carbon emissions reduction to be eligible for finance.

The CEFC has invested $60 million to allow St George Community Housing (SGCH) to build over 200 new energy efficient homes. The new homes will be built to a minimum 4 Star Green Star rating (representing best practice), or a 7 star rating under the Nationwide House Energy Rating Scheme (NatHERS). SGCH currently has two multi-unit residential projects registered for Green Star certification.

More recently, the CEFC has invested $100 million into AMP Capital's Wholesale Office Fund, which has committed to becoming carbon neutral by 2030. This is just part of the fund's broad commitments to sustainability which include lifting the portfolio's NABERS average base building energy rating to 5.5 Stars by 2030 and delivering a pipeline of highly-sustainable flagship assets like Australian Technology Park and Quay Quarter Tower, which is targeting a 6 Star Green Star and 5.5 star NABERS rating once completed.

3.7 Government Procurement

One of the first examples of state government leadership in sustainable building was the Victorian Government's requirement that all new office space must be Green Star-certified. At the time, Green Star certification was still relatively new and only a small portion of industry was familiar with it. However, to supply government demand for high quality Green Star office space, industry rapidly upskilled and adopted Green Star and today 4 and 5 Star Green Star certification is usually achieved on a cost-neutral basis.

With increasing commitments by all governments to reach net zero emissions targets by 2050, it is important that parallel commitments are reflected in government procurement policy. Leadership on committing to net zero buildings is now being led by industry with companies like Investa, who has committed to a net zero emissions target by 2040 across its $10 billion+ office portfolio and business operations, and AMP Capital cited earlier.

Governments owe taxpayers value for money on any government expenditure. Best practice procurement by government is a powerful mechanism to drive transformation through supply chains and catalyse improvements in the behaviour of responding markets for goods and services. Governments must consider supply chains holistically to achieve the best value. The argument that more environmentally sustainable options and certification cost more, often do not hold up when the full benefits are taken into account.

Green Star-rated buildings or office fit-outs should be a pre-condition for the procurement of any government building or office. The use of rating tools like Green Star can provide evidence to support a claim of sustainability and energy efficiency.

3.8 Financial Transparency of Green Star

In order to dispel the myth that Green Star is too expensive, in 2014 the GBCA launched the Green Star Financial Transparency Innovation Challenge, with the aim of increasing the information available to industry and government on the costs and benefits of sustainable building. Increasing this knowledge will demystify the costs, and when combined with the benefits of sustainable building practices, provide clear information to the industry and government on the value proposition of sustainable of sustainable buildings, fitouts and communities.

The Innovation Challenge aims to encourage owners, developers and operators to disclose the costs of sustainable building practices, and to agree to participate in a yearly report developed by the GBCA that will inform the building industry on the true costs of sustainability.

As this is the first report from the Financial Transparency Challenge the sample size within each sector is small, therefore the results should be treated with caution. Future editions of this report will increase the validity of the results.

On average, developers/building owners are achieving Green Star ratings with 3 per cent of their overall project budgets. The data shows that Green Star projects can be delivered for less than one per cent of the overall project budget. On average, projects are spending an additional:

- 1.5% per square metre to achieve a 4 Star Green Star rating
- 2.7% per square metre to achieve a 5 Star Green Star rating
- 3.2% per square metre to achieve a 6 Star Green Star rating

3.9 Adaptation and Resilience

The Green Star – Design & As Built 'Management' category encourages and rewards the adoption of practices and processes that enable and support best practice sustainability outcomes throughout the different phases of a project's design, construction and its ongoing operation. Throughout the 'Management' category, Green Star – Design & As Built intents to improve projects sustainability performance by influencing areas where decision-making is critical.

The *Adaptation and Resilience* credit aims to encourage and recognise projects that are resilient to the impacts of a changing climate and natural disasters, through the implementation of a Climate Adaptation Plan.

The Green Star – Communities 'Governance' category aims to encourage and recognise developers and projects that demonstrate leadership within the sector, by the establishment and maintenance of strong governance practices. The category promotes engagement, transparency, and community and industry capacity building. It also seeks to ensure that community projects are resilient to a changing climate.

The *Adaptation and Resilience* credit aims to encourage and recognise projects that are resilient to the impacts of a changing climate and natural disasters. Projects are rewarded via the development of a project-specific Climate Adaptation Plan as well as the development of a project-specific Community Resilience Plan that addresses preparation, during-and-post disaster communication, safety and, response.

The GBCA is further looking to drive resilience in the built environment by the establishment of a *Resilience Innovation Challenge,* to reward Green Star projects for implementing an integrated and holistic resilience approach. This body of work will be worked on in collaboration with ASBEC, City of Sydney and City of Melbourne as part of their 100 Resilience Cities Programs, helping their respective cities become more resilient to the physical, social and economic challenges that are a growing part of the 21st century.

As the Investor Group on Climate Change report *From Risk to Return: Investing in Climate Adaptation (2017)* identified, for investors, the physical risk dimensions of climate change must become business as usual and be a part of the risk assessment process. The GBCA also supports the recommendations from the ASBEC *Preparing for Change: A Climate Change Adaptation Framework for the Built Environment (2012) (Framework),* which outlined the predicted climate change impacts on the built environment and a national framework and addressing the challenges. The Framework aims to:

- Protect the wellbeing of communities through targeted policy initiatives and better urban and building design
- Ensure appropriate institutional arrangements to facilitate resilience and adaptation
- Realise economic benefits from early adaptation through effective strategic planning and risk minimisation
- Advance sustainability through better resources and risk management strategies
- Increase community education and awareness about climate change risks and adaptation.

Case study: Parramatta Square

Parramatta Square is one of the largest urban renewal projects in Australia. The three-hectare mixed-use urban renewal project will provide the foundation for growth in the city and create a future based on good urban design that is environmentally sustainable, has vibrant, beautiful public spaces and an effective public transport system.

The six-stage development will incorporate a new civic building, community centre and library as well as commercial, residential and retail developments. A 5 Star Green Star ratings target for all buildings across the six stages of the development has also been set.

City of Parramatta's objectives for Parramatta Square are:

- To showcase design excellence and environmental sustainability
- To provide opportunities for future employment growth
- To provide a gathering space and ceremonial centre for public use as well as civic events and recurrent cultural and community events
- To contribute to the City's identity and its social and cultural life by becoming a showcase for innovative design in the heart of Parramatta CBD.

Targeting a Green Star – Communities rating for the development provides independent proof to residents, businesses and investors that Parramatta Square delivers economic, social and environmental sustainability.

3.10 Investment

The 2016 Global Real Estate Sustainability Benchmark (GRESB) - which assessed 759 real estate companies and funds (representing 66,000 assets and $3.7 trillion in gross asset value) – ranked Australia the world's most sustainable real estate market for the sixth year in a row.

GBCA members such as Stockland, DEXUS, ISPT and Lendlease are regularly ranked as sector leaders. Despite growing international competition, the average score of Australian companies and funds continues to increase, extending Australia's leadership position and making Australia's property market an increasingly attractive investment option.

Globally, an increasing focus by investors on the environmental, social and governance (ESG) performance of assets highlights the pressing need for best practice independent certification to support private investment opportunities.

The strength of GRESB as a tool to evaluate ESG performance in 2016 grew to also provide a benchmark report for sustainability reporting in infrastructure. The establishment of global benchmarking, like GRESB Infrastructure, alongside the UN Principles for Responsible Investment and associated Guidelines for Direct Infrastructure Investment, reflects the appetite of global institutional investors to assess the ESG performance of infrastructure assets in the same way as global real estate assets have been assessed to date.

For investors, global benchmarking, like that facilitated through GRESB Infrastructure, helps manage risk (in particular those risks associated with climate and social licence), supports better governance and provides accountability for outcomes and reporting.

> *52% of institutional investors, such as banks, insurance companies, pension funds, and sovereign wealth funds, now consider ESG factors when investing in infrastructure funds, a higher percentage than for private equity, real estate or investments in natural resources.*
>
> *GRESB Infrastructure: 2016 Report, p. 3*

Initiatives like GRESB Infrastructure will help drive new investment, and Australia's success in accessing this investment will be aided through best practice development and the use of tools like Green Star across major infrastructure and urban renewal projects.

The GBCA looks forward to continuing to support the Australian Government as we work to reduce the future impacts of climate change on housing, buildings and infrastructure and we welcome opportunities for further collaboration and consultation as this Inquiry progresses in the coming months.