EVERY BUILDING COUNTS

2023 EDITION

Innovating for a greener, healthier, and more equitable built environment

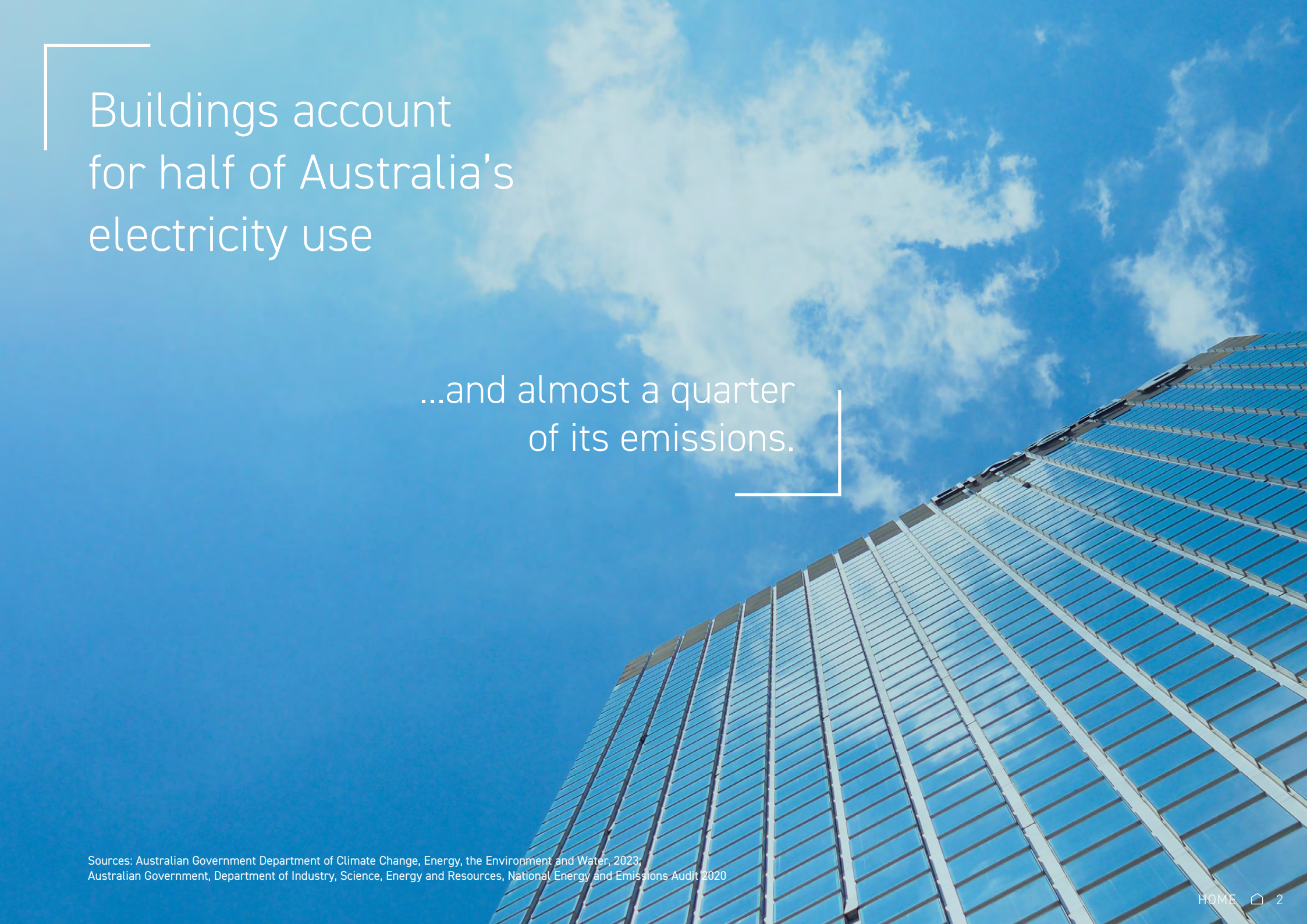
FOR LOCAL GOVERNMENTS

Green Building Council Australia

PROPERTY COUNCIL of Australia

Buildings account for half of Australia's electricity use

...and almost a quarter of its emissions.



Sources: Australian Government Department of Climate Change, Energy, the Environment and Water, 2023;
Australian Government, Department of Industry, Science, Energy and Resources, National Energy and Emissions Audit 2020

"Since declaring a climate and biodiversity emergency, we've worked tirelessly to transition our city to a more sustainable and environmentally friendly place.

Over the past decade, we've managed to cut our own carbon emissions by 76 per cent, but we know there is more we can do, including reducing energy use in our Council buildings by converting from gas to electric, and using more sustainable materials in major infrastructure projects.

By cutting our own emissions, we can focus on achieving our target of Net Zero by 2040 across the municipality – leading the way for other businesses to tackle climate change."

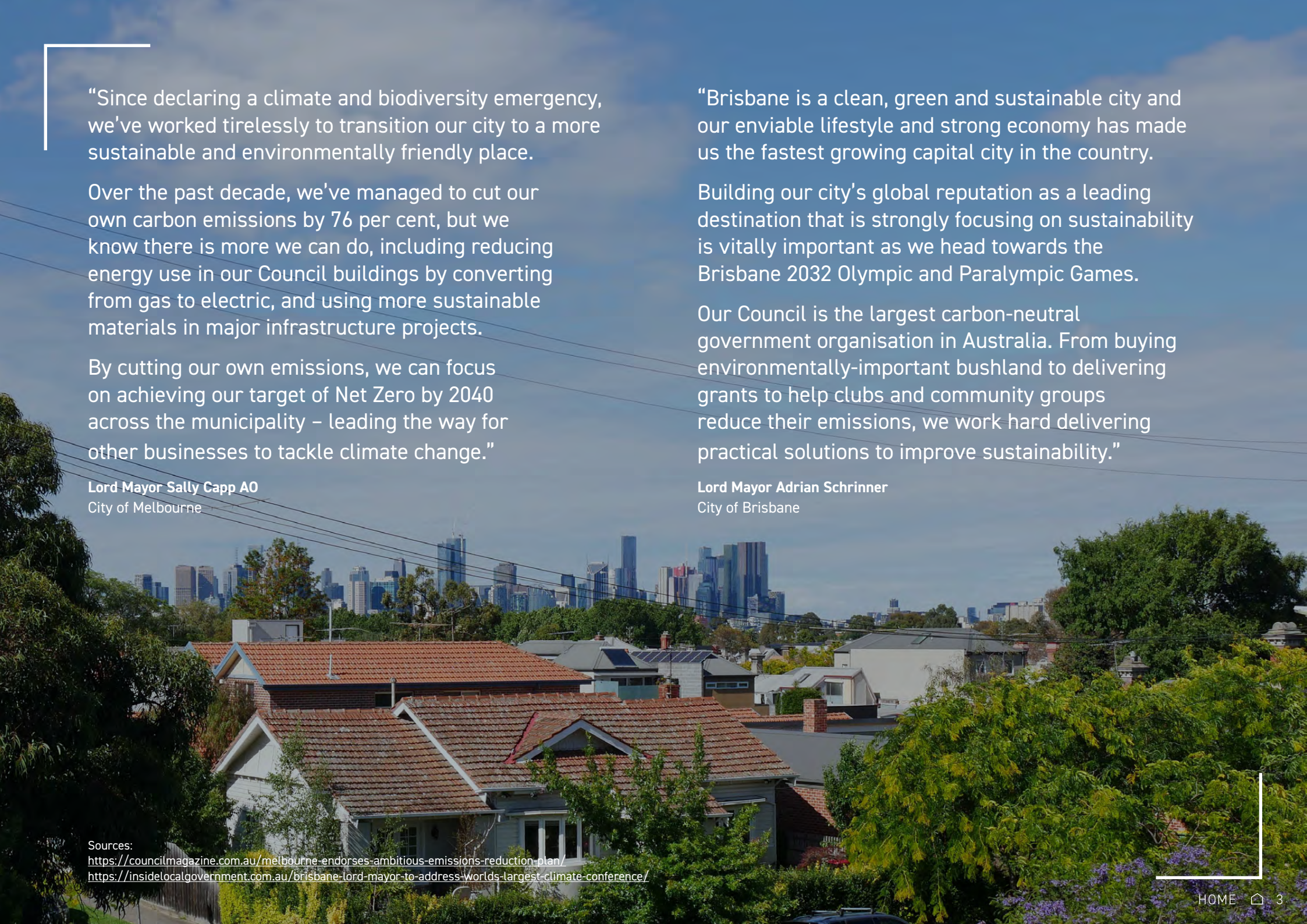
Lord Mayor Sally Capp AO
City of Melbourne

"Brisbane is a clean, green and sustainable city and our enviable lifestyle and strong economy has made us the fastest growing capital city in the country.

Building our city's global reputation as a leading destination that is strongly focusing on sustainability is vitally important as we head towards the Brisbane 2032 Olympic and Paralympic Games.

Our Council is the largest carbon-neutral government organisation in Australia. From buying environmentally-important bushland to delivering grants to help clubs and community groups reduce their emissions, we work hard delivering practical solutions to improve sustainability."

Lord Mayor Adrian Schrinner
City of Brisbane



Sources:
https://councilmagazine.com.au/melbourne-endorses-ambitious-emissions-reduction-plan/
https://insidelocalgovernment.com.au/brisbane-lord-mayor-to-address-worlds-largest-climate-conference/

ENERGY EFFICIENCY MEASURES IN BUILDINGS COULD DELIVER:

$20 BILLION

in energy bill savings for businesses and households

64MT

of avoided CO2-e emissions by 2050

ELECTRIFYING THE BUILT ENVIRONMENT COULD DELIVER:

$49 BILLION

in energy saving between 2024 and 2050 compared to business as usual

199MT

of avoided CO2-e emissions

WE ARE COMMITTED TO ACHIEVING DECARBONISATION BY MID-CENTURY IN ACCORDANCE WITH AUSTRALIA'S RESPONSIBILITIES UNDER THE PARIS AGREEMENT.

While Australia's leading property companies continue to top international sustainability benchmarks, the challenge remains to extend this progress across the sector more broadly.

The right policy settings can help our buildings achieve their full potential with consistency and efficacy. Where possible, the sector needs targeted policies and national consistency of processes and programs.

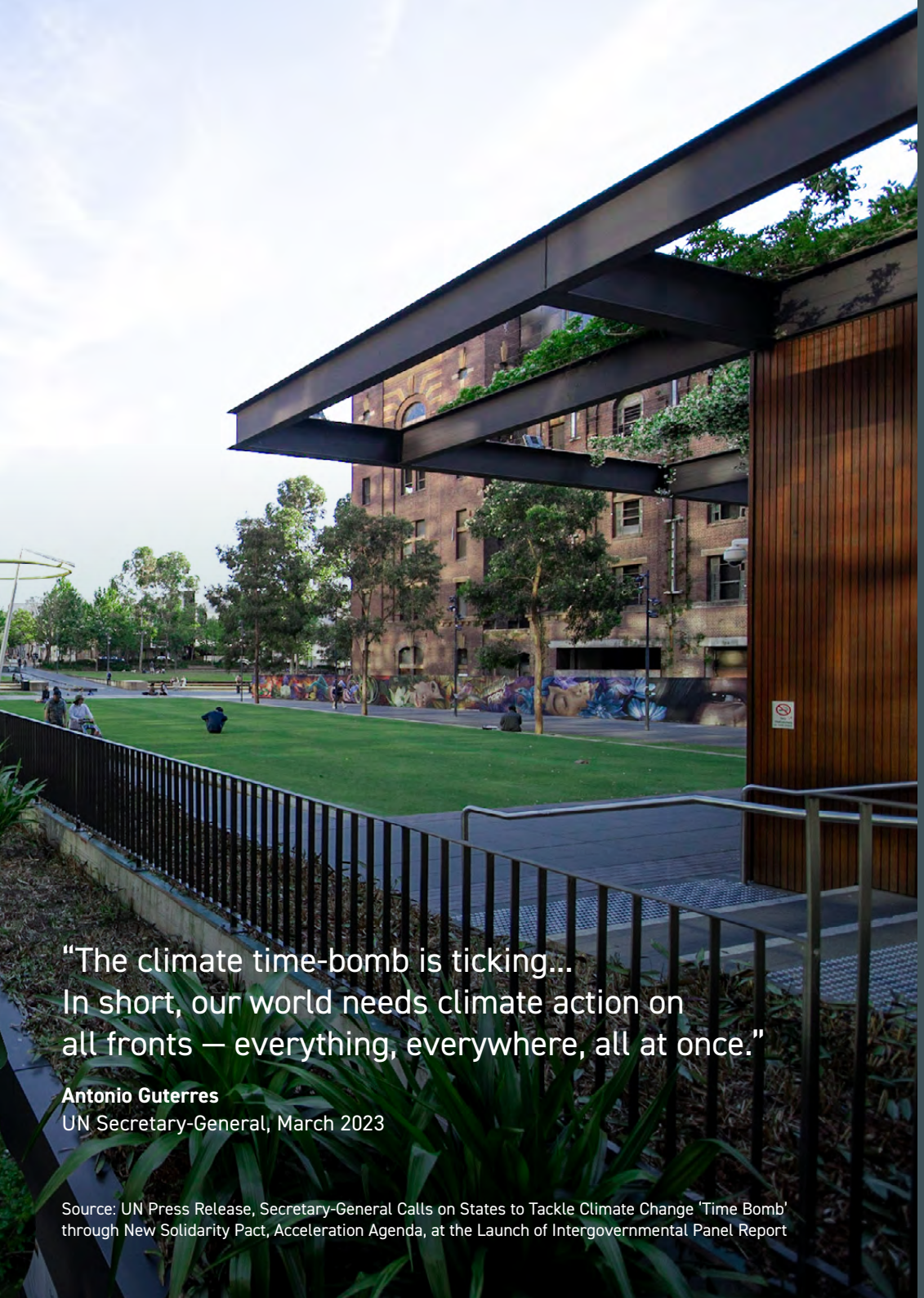
Sources: ASBEC, Low Carbon, High Performance, 2016; ASBEC, Unlocking the Pathway: Why Electrification is the Key to Net Zero Buildings, 2022

DRAWING FROM BEST PRACTICE

WE HAVE ILLUSTRATED MANY OF THE POLICIES OUTLINED IN THIS DOCUMENT WITH BEST PRACTICE CASE STUDIES FROM AUSTRALIA AND OVERSEAS TO INFORM RECOMMENDATIONS WITH THE BEST VALUE FOR GOVERNMENTS, OCCUPANTS, AND INDUSTRY.

This work has resulted in recommendations covering residential, commercial, and public buildings ready for implementation by local government.

This report is a companion to two others tailored for the Federal Government and State and Territory Governments, respectively, and is the latest in a series of flagship publications showing how government and industry can work together to innovate for a greener, healthier, and more equitable built environment.



"The climate time-bomb is ticking...
In short, our world needs climate action on
all fronts — everything, everywhere, all at once."

Antonio Guterres
UN Secretary-General, March 2023

Source: UN Press Release, Secretary-General Calls on States to Tackle Climate Change 'Time Bomb' through New Solidarity Pact, Acceleration Agenda, at the Launch of Intergovernmental Panel Report

URGENT ACTION

THE BUILT ENVIRONMENT HAS THE TECHNOLOGY TO DECARBONISE NOW – BUT WE MUST DO THIS AT SPEED AND SCALE TO SMOOTH THE WAY FOR OTHER HARD-TO-ABATE SECTORS.

Australia's transition to a low emissions economy will be smoother if governments set a clear plan, a steady trajectory for emissions reductions in key economic sectors, and a suite of policies providing industry certainty.

With the right policy frameworks, we can minimise transition costs and create economic opportunities across all parts of the industry, from sole traders and homeowners to large businesses.

ZERO-CARBON-READY BUILDINGS

Zero-carbon-ready buildings are buildings that can operate in a low-emissions economy.

The International Energy Agency defines them as:

"A ZERO-CARBON-READY BUILDING IS HIGHLY ENERGY-EFFICIENT AND EITHER USES RENEWABLE ENERGY DIRECTLY OR USES AN ENERGY SUPPLY (E.G. ELECTRICITY OR DISTRICT HEATING) THAT WILL BE FULLY DECARBONISED BY 2050."

Together with a decarbonised grid, zero-carbon-ready buildings deliver the end goal of a decarbonised built environment and feature several characteristics:

- High efficiency, high performance
- Fossil fuel-free and fully electric
- Powered by renewable electricity
- Grid Responsive
- Offset with nature
- Low embodied carbon

REDUCE

Built with lower upfront emissions

Built using materials with significantly lower embodied carbon. During construction, there is a reduction in emissions.

Highly efficient

All buildings and infrastructure are energy efficient – reducing stresses in the grid.

Walkable and livable

Good urban design, promotion of active transport, and low-carbon options reduce transport emissions.

Grid Responsive

Buildings that interact with the grid, including demand response and allowance for electric vehicles.

ELIMINATE

Fossil fuel-free

Buildings do not use fossil fuels for heating, hot water, cooking and onsite energy generation.

Powered by renewables

All energy used in buildings comes from 100% onsite or offsite renewable sources.

COMPENSATE

Offset with nature

The emissions balance is compensated or neutralised through investments in high-integrity, nature-based carbon offsets.

THIS REPORT WAS PRODUCED BY

PROJECT PARTNERS

Green Building Council Australia

PROPERTY COUNCIL of Australia

STEERING GROUP PARTNERS

asbec AUSTRALIAN SUSTAINABLE BUILT ENVIRONMENT COUNCIL

energy efficiency COUNCIL

METHODOLOGY

We have identified solutions for different building types across the built environment.


All buildings


Government


Commercial


Residential

We have identified the building lifecycle stage at which we can apply each recommendation.


All stages


Design


Construction


Commissioning


Sale/lease


Retrofit


Occupation

We assessed each policy according to the key criteria.

Impact

Emissions reduction opportunity

Ease of implementation

Lack of barriers or challenges for adoption

Cost effectiveness

Industry return on investment

POLICY THEMES

THEME 1

ZERO-CARBON-READY RESILIENT BUILDING PLAN

THEME 2

ELECTRIFICATION

THEME 3

INCENTIVISE HIGH PERFORMANCE

THEME 4

GOVERNMENT LEADERSHIP

THEME 5

ROBUST RATING TOOLS FOR DIFFERENT BUILDING TYPES

THEME 6

TOWARDS ZERO EMBODIED CARBON

THIS IS AN INTERACTIVE PDF. CLICK THE BOXES TO GO TO EACH THEME.

KEY RECOMMENDATIONS

1

Set a long-term vision for zero-carbon-ready buildings.

THEME 1

2

Support a nationally harmonised approach to phase out fossil gas in buildings and appliances.

THEME 2

3

Accelerate the shift to high-performance, sustainable buildings with targeted incentives.

THEME 3

4

Commit to achieving zero-carbon-ready new and existing government-owned and leased buildings by 2030.

THEME 4

5

Drive the broader application of trusted, robust and credible rating systems such as Green Star and NABERS in the community.

THEME 5

6

Adopt a credible national framework for measuring embodied carbon.

THEME 6

RECOMMENDATIONS SUMMARY

THEME 1
ZERO-CARBON-READY RESILIENT BUILDING PLAN

1.1 Set a long-term strategy for zero-carbon-ready buildings

1.2 Set a long-term strategy for climate-resilient buildings that can adapt to acute shocks and long-term stresses from climate change

1.3 Develop a plan for a just transition by prioritising support for low-income and vulnerable Australians

THEME 2
ELECTRIFICATION

2.1 Support a nationally harmonised approach to phase out fossil gas in buildings and appliances

2.2 Support a strategy for quality retrofits for existing commercial and residential buildings to enable a just transition

2.3 Support market readiness for electrification

THEME 3
INCENTIVISE HIGH PERFORMANCE

3.1 Accelerate the shift to high-performance, sustainable buildings with targeted incentives

3.2 Shift the mid-tier commercial building market to better performance

3.3 Support the creation of industry leadership groups in priority sectors to champion best practice and collaboration

3.4 Drive deep energy efficiency and electrification retrofits for existing homes

THIS IS AN INTERACTIVE PDF. CLICK THE RECOMMENDATION TO GO TO EACH PAGE.

RECOMMENDATIONS SUMMARY (CONTINUED)

THEME 4
GOVERNMENT LEADERSHIP

4.1 Commit to achieving zero-carbon-ready new and existing government-owned and leased buildings by 2030

4.2 Commit to applying trusted, robust and credible building rating systems such as Green Star and NABERS in all new government projects and existing assets

4.3 Inform consumers on residential energy efficiency and electrification

4.4 Form coalitions of councils to drive sustainable outcomes at a local level

THEME 5
ROBUST RATING TOOLS FOR ALL BUILDING TYPES

5.1 Drive the broader application of trusted, robust and credible rating systems such as Green Star and NABERS in the community

5.2 Endorse and contribute to a single national rating scheme for home energy performance

THEME 6
TOWARDS ZERO EMBODIED CARBON

6.1 Adopt a credible national framework for measuring embodied carbon

6.2 Introduce embodied carbon reduction targets for government projects

6.3 Support Australian leadership in high-performing and circular building products

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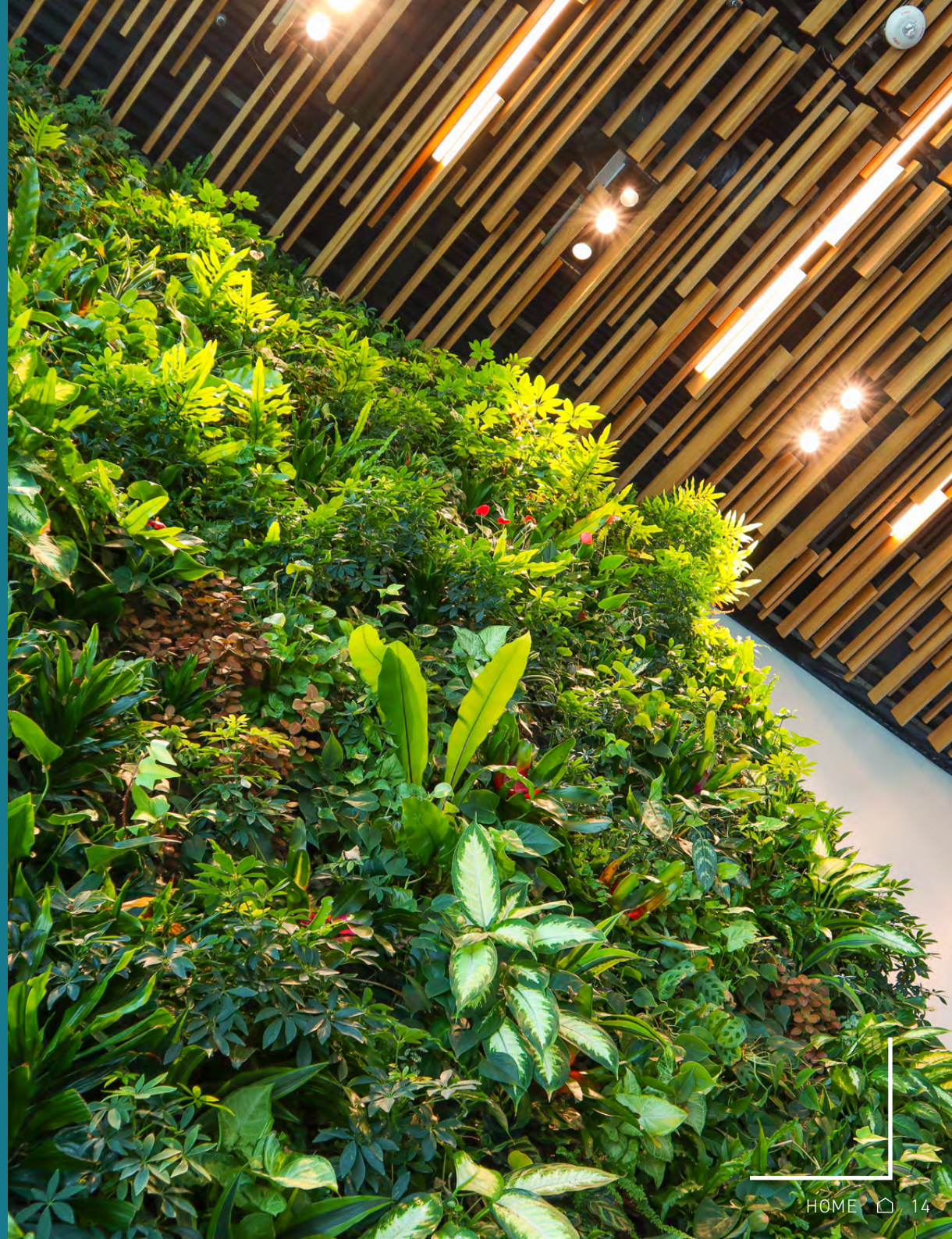
THEME 1
ZERO-CARBON-READY RESILIENT BUILDING PLAN



ZERO-CARBON-READY RESILIENT BUILDING PLAN

1.1 **Set a long-term strategy for zero-carbon-ready buildings**

1.2 **Set a long-term strategy for climate-resilient buildings that can adapt to acute shocks and long-term stresses from climate change**

1.3 Develop a plan for a just transition by prioritising support for low-income and vulnerable Australians

RECOMMENDATION 1.1

SET A LONG-TERM STRATEGY FOR ZERO-CARBON-READY BUILDINGS

BUILDING TYPE:

All buildings

LIFECYCLE STAGE:

All stages

IMPACT:

EASE:

COST EFFECTIVENESS:

ISSUE

Australia's national net zero emissions target by 2050 and 43 per cent reduction on 2005 levels by 2030 means that we are committed to transitioning toward a net zero economy. Decisive action across all sectors will be necessary to reach this goal. Buildings present some of the lowest-cost emissions reduction opportunities, and the technology already exists today to achieve zero-carbon-ready buildings. A national plan that includes sectoral targets and policies for emissions reduction out to 2050 would leverage opportunities in the sector and expand the progress shown by market leaders in recent years. Local councils directly engage with ratepayers (residential and commercial property owners), industry and other levels of government. Their unique position allows them to collaborate with stakeholders in designing and implementing plans to deliver zero-carbon-ready, resilient buildings.

SOLUTION

While many councils have set ambitious net zero targets for their operations, all local governments should commit to a nationally harmonised long-term target of net zero by 2050 or sooner for their local area. Local governments should also establish municipal plans with interim, science-based targets aligned with Australia's obligations under the Paris Agreement and a process for regular review. Local government can implement these plans through existing functions with support from state and federal-funded programs, as well as allowing for partnerships with the private sector to deliver strategic outcomes.

CARBON NEUTRAL ADELAIDE

The City of Adelaide is committed to making Adelaide one of the world's first carbon-neutral cities through the Carbon Neutral Adelaide[1] policy and programs. Joining a range of initiatives aimed at the community, the City of Adelaide offers support to the business sector to reduce carbon emissions from buildings, such as incentives and rebates for PV systems, appliance electrification, energy monitoring systems, and certification with Climate Active, Green Star, Living Building and others.

RECOMMENDATION 1.2

SET A LONG-TERM STRATEGY FOR CLIMATE-RESILIENT BUILDINGS

that can adapt to acute shocks and long-term stresses from climate change

BUILDING TYPE:

All buildings

LIFECYCLE STAGE:

All stages

IMPACT:

EASE:

COST EFFECTIVENESS:

ISSUE

Many of climate change's medium and long-term impacts will stay locked in due to anthropogenic increases of greenhouse gases in the atmosphere. Australia is experiencing increased frequency and severity of extreme weather events. The built environment is not currently equipped to withstand future climate conditions, potentially leading to heightened risks for buildings and occupants. Buildings built today will be in use for decades. Their design should deliver increased resilience to more frequent and severe extreme weather and preserve the safety of occupants.

A nationally agreed set of future climate scenario data can better support local governments. This subsequent data can underpin a comprehensive framework of scheduled regulation updates, targeted retrofits and land-use planning requirements.

SOLUTION

Local governments are at the forefront of preparing our communities to withstand some of the most extreme impacts of climate change. Local governments have a critical role in ensuring that new developments are not in areas exposed to flooding, coastal inundation, erosion or bushfires. Protecting and mitigating the impacts of climate change on existing communities will be an ongoing challenge, and local governments must use future climate scenario data and other tools to develop long-term plans for community resilience.

RECOMMENDATION 1.3

DEVELOP A PLAN FOR A JUST TRANSITION BY PRIORITISING SUPPORT

for low-income and vulnerable Australians

BUILDING TYPE: Residential

LIFECYCLE STAGE: All stages

IMPACT: ☑ ☑ ☑

EASE: ☑ ☑ ☑

COST EFFECTIVENESS: ☑ ☑ ☑

ISSUE

Without government intervention, vulnerable and low-income Australians will be disproportionately affected by the impacts of a changing climate and will miss out on electrification's benefits. Scarce access to high-energy performance and fully electric and resilient housing can trigger higher energy bills, negative health impacts and increased exposure to extreme weather events for vulnerable occupants. In particular, retrofitting existing homes to be all-electric and meet higher energy efficiency and resilience standards requires an outlay of capital beyond the reach of many households.[2]

Government intervention must ensure an equitable transition to a zero-carbon-ready, resilient built environment. High-efficiency, high-performance, all-electric homes (including apartments) with integrated solar PV and electric vehicle management should be affordable for all.

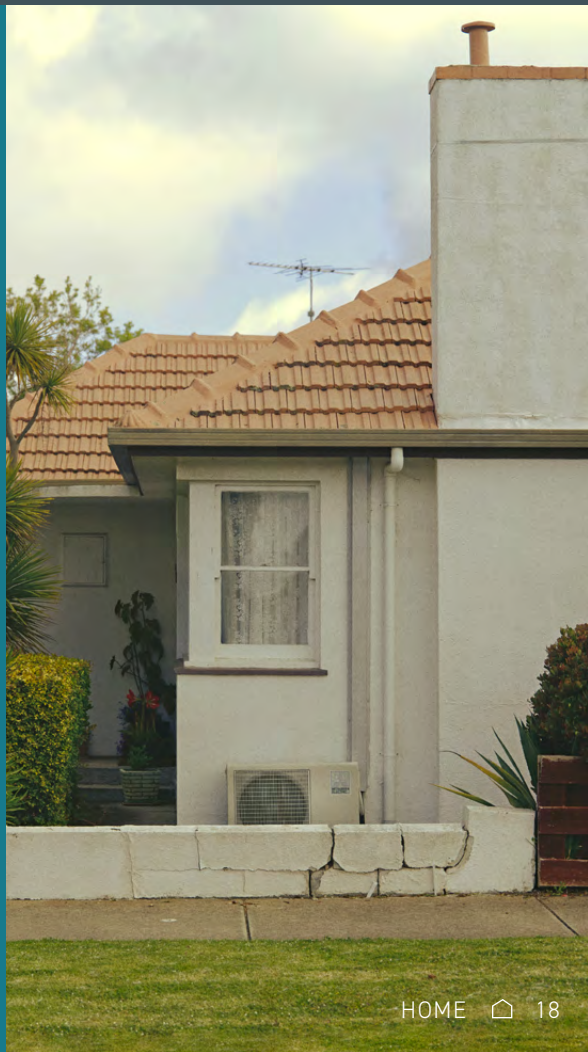
SOLUTION

Local governments are often well-placed to assist the most vulnerable in our community. Local governments must identify how they can support a just transition for low-income and vulnerable households in their communities alongside any plans for emissions reduction and climate change mitigation.

Support may include:

- Information and education campaigns
- Establishing programs to offer grants and subsidies to low-income and vulnerable households
- Exploring innovative finance mechanisms

Local governments are also well-placed to connect households with support offered by Federal and/or State and Territory Governments and to become the trusted partner for the local roll-out of national or state programs.



THEME 2
ELECTRIFICATION

ELECTRIFICATION

2.1 Support a nationally harmonised approach to phase out fossil gas in buildings and appliances

2.2 Support a strategy for quality retrofits for existing commercial and residential buildings to enable a just transition

2.3 Support market readiness for electrification

RECOMMENDATION 2.1

SUPPORT A NATIONALLY HARMONISED APPROACH

to phase out fossil gas in buildings and appliances

BUILDING TYPE:

All buildings

LIFECYCLE STAGE:

All stages

IMPACT:

EASE:

COST EFFECTIVENESS:

ISSUE

Many buildings in operation today will still be in use in 2050 and beyond. We cannot reach net zero without decarbonising the built environment. ASBEC's Unlocking the Pathway[3] report shows that 100 per cent electrification with renewable electricity is the lowest-cost, fastest emissions reduction pathway for Australia's built environment. However, it is not a zero-cost option. The supply chains to Australia's millions of buildings are complex and far-reaching, with most energy-consuming appliances manufactured overseas. All supply chain stakeholders, from equipment manufacturers, importers, wholesalers, retailers, designers, installers, maintainers, to consumers, deserve certainty about the transitioning from fossil gas to encourage investment in the right technology, training and skills.

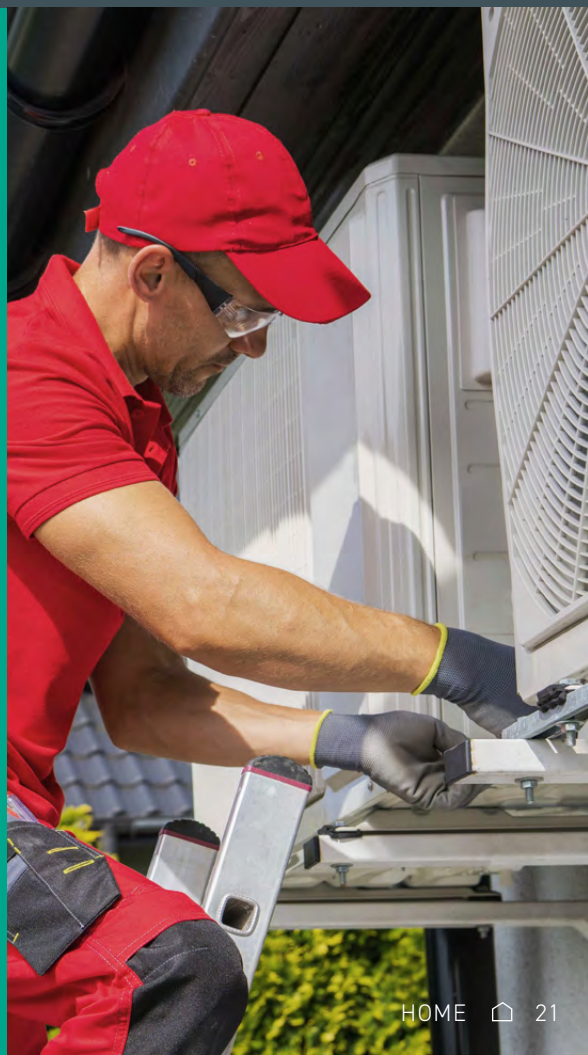
Government coordination at every level will be vital for a rapid transition. While a national electrification plan is needed to provide the market with the signals appropriate to ensure a smooth transition of the existing building stock to all-electric and the economic rollback of gas delivery systems, a planned phasing out of gas to buildings will need to occur on a geographic basis as parts of the gas network lose connections, and a declining number of customers shoulder the maintenance cost.

SOLUTION

Local governments should consider how they can implement fossil gas-free planning controls and deliver locally-focused programs for information and engagement to support a planned gas phase-out.

Local government will be a critical partner in any state or federally-led action to disallow gas connections for new homes and buildings via changes to the National Construction Code and state planning controls, as well as initiatives to tackle the phasing out of gas to existing buildings and precincts.

A national electrification plan will be significant in scale. Still, some parts, such as solar PV installation, are already well underway, as are many local government-led initiatives to educate the community about the benefits of phasing out fossil gas in buildings and appliances.



RECOMMENDATION 2.2

SUPPORT A STRATEGY FOR QUALITY RETROFITS

for existing commercial and residential buildings to enable a just transition

BUILDING TYPE:

Commercial

Residential

LIFECYCLE STAGE:

Retrofit

IMPACT:

EASE:

COST EFFECTIVENESS:

ISSUE

Electrification of buildings and homes requires replacing millions of gas appliances and replacing them with cleaner, healthier and vastly more efficient electric equipment. During the initial phases of the transformation, the upfront capital cost can impede uptake. Linking appliance upgrades with efficiency improvements like insulation and shading contributes to an optimised whole-of-energy system and a built environment compatible with a low-carbon economy.

SOLUTION

A national building retrofit program that addresses commercial buildings and all types of homes - from detached to high-rise apartments - will ensure that cleaner, healthier, more efficient and more comfortable buildings are available to all. Local governments will have a critical role in connecting the community, primarily low-income and vulnerable households, with federal and/or state-led retrofit programs. Local governments as trusted program partners, as well as providing their own targeted incentive programs, will help ensure that a clean, 100 per cent renewable future is affordable for all, including renters and social and community housing occupants.

ENERGY SWITCH SUPPORT FOR LOW-INCOME RESIDENTS

Merri-bek City Council in Victoria provides an 'all in one' service, including financial support to low-income homeowners to install solar panels or improve the thermal comfort of their homes whilst lowering energy bills and reducing carbon emissions.[4]

Under the program, Council provides a facilitated service to eligible households that includes:

- Trusted, experienced service providers that Council has vetted
- Targeted engagement and promotional activities to ensure program awareness and interest
- Assistance in gaining access to the Victorian Government rebates and interest-free loans
- Financial subsidies of up to $3,000 for a solar system or up to $2,000 for gap sealing and/or insulation upgrades to cover out-of-pocket expenses.

The program aims to assist approximately 130 households each year.

RECOMMENDATION 2.3

SUPPORT MARKET READINESS FOR ELECTRIFICATION

BUILDING TYPE:

All buildings

LIFECYCLE STAGE:

All stages

IMPACT:

EASE:

COST EFFECTIVENESS:

ISSUE

Transitioning 85 per cent of homes off gas by 2040 requires retrofitting hot water systems in 5,000 homes every week until 2040, starting today.[5] While some are already embracing all-electric options, many in the community are reluctant to move away from gas for various reasons, including upfront costs, availability of equipment and services, and misconceptions about the performance of gas appliances. While overcoming the cost, skills and supply chain barriers will take a coordinated approach across government and industry, there are many opportunities to provide information and educate consumers at a community level.

SOLUTION

Local governments can help support market readiness for electrification by assisting communities to understand the benefits of electric appliances for heating, water heating and cooking, as well as the health implications of using gas in the home. Engaging with and making information available to those preparing to build or renovate homes or commercial premises, as well as the wider community who may be considering replacement or upgrade of appliances, will accelerate demand for going all-electric.

COUNCILS URGE COMMUNITIES TO ELECTRIFY EVERYTHING

More than 70 councils across Australia are part of a community of practice to support the delivery of local campaigns urging communities to go all-electric in their homes and businesses.

Participating councils provide various resources to help people understand the opportunities and benefits of electrification.[6]

From Go Electric plans, online information and events, stories of residents who have made the switch, outdoor and online advertising, and in-person workshops to providing portable induction cooktops to borrow and trial, local councils are leading the charge on electrification. Activities are informed by qualitative research undertaken by Merri-bek City Council, translating research into practice.

THEME 3
INCENTIVISE HIGH PERFORMANCE

INCENTIVISE HIGH PERFORMANCE

3.1 Accelerate the shift to high-performance, sustainable buildings with targeted incentives

3.2 Shift the mid-tier commercial building market to better performance

3.3 Support the creation of industry leadership groups in priority sectors to champion best practice and collaboration

3.4 Drive deep energy efficiency and electrification retrofits for existing homes

RECOMMENDATION 3.1

ACCELERATE THE SHIFT TO HIGH-PERFORMANCE, SUSTAINABLE BUILDINGS

with targeted incentives

BUILDING TYPE:

All buildings

LIFECYCLE STAGE:

Design

Construction

Retrofit

IMPACT:

EASE:

COST EFFECTIVENESS:

ISSUE

Market leaders have made significant progress in recent years. However, investing in high-performing new homes, buildings, or upgrades remains a low priority for many stakeholders in the built environment. To help builders, developers, and owners overcome barriers such as real or perceived high upfront costs, long payback periods and uncertainty of planning processes, the provision of planning and financial incentives is a mechanism they could more frequently utilise.

SOLUTION

Local governments should consider how offering incentives can encourage high-performance, all-electric buildings. Working with State and Territory governments, local governments can develop and embed incentives that encourage better sustainability practices and reduced emissions, such as:

- Contributions or rebates for initiatives such as environmental ratings for buildings, electrification or installation of renewable energy or EV infrastructure
- Discounts on rates or charges for buildings that meet high sustainability requirements
- Green door policies, which provide expedited or prioritised review and approval of development applications that commit to meeting high sustainability requirements
- Height bonuses or floor space concessions that allow increases in net lettable area for commercial buildings that commit to meeting high sustainability requirements
- Density bonuses, which offer developers an increase in the permitted density of residential projects in exchange for more sustainable and high-performing buildings.

GREEN BUILDINGS INCENTIVE POLICY

Brisbane City Council (BCC) offers the Green Buildings Incentive Policy[7] to encourage the design of greener and more energy-efficient buildings across Brisbane. Under the incentive scheme, BCC will provide a financial payment equivalent to 50 per cent of infrastructure charges for council networks to buildings meeting specific criteria. This can include certification with Green Star, EnviroDevelopment or Climate Active Carbon Neutral Standard for Buildings.

RECOMMENDATION 3.2

SHIFT THE MID-TIER COMMERCIAL BUILDING MARKET TO BETTER PERFORMANCE

BUILDING TYPE:

Commercial

LIFECYCLE STAGE:

Retrofit

IMPACT: ☑ ☑ ☑

EASE: ☑ ☑ ☑

COST EFFECTIVENESS: ☑ ☑ ☑

ISSUE

Mid-tier buildings must catch up with those leading the market in implementing energy efficiency upgrades and retrofits. The reasons include lack of awareness or motivation, difficulty accessing capital and information, lack of networking among owners and tenants, split incentives, and lack of skills and expertise amongst industry professionals. Given the sector's size, mid-tier buildings present significant untapped policy opportunities for governments. For example, mid-tier office buildings – those classed as non-Premium Grade or non-A Grade – account for around 80 per cent of Australia's office buildings and 50 per cent of floor space. Research has shown that the savings potential in mid-tier office buildings is significant and feasible.

SOLUTION

Working with State and Territory Governments, local governments should accelerate energy efficiency and electrification opportunities for mid-tier buildings. They can do this by developing a cohesive ecosystem of information, capacity and expertise, targeted incentives to encourage building upgrades, facilitating the uptake of innovative finance models and investing in research to quantify further and understand the mid-tier sector.

ENVIRONMENTAL UPGRADE AGREEMENTS

In 2016, the Victorian Government passed legislation empowering all local governments in Victoria to offer businesses Environmental Upgrade Agreements (EUAs).

EUAs are fixed, long-term, low-interest finance for businesses to fund commercial building upgrades. Mornington Peninsula Shire provides EUAs for businesses, allowing them to secure a loan against the building to fund projects to improve energy, water or waste efficiency or increase renewable energy.[8] The council has now facilitated 17 projects, saving businesses $6.95 million and abating over 42,000 tonnes of CO_2.

RECOMMENDATION 3.3

SUPPORT THE CREATION OF INDUSTRY LEADERSHIP GROUPS

in priority sectors to champion best practice and collaboration

BUILDING TYPE:

All buildings

LIFECYCLE STAGE:

All stages

IMPACT:

EASE:

COST EFFECTIVENESS:

ISSUE

The breadth and diversity of the built environment is a significant challenge for policy development. Targeted approaches for specific market segments can be a way to overcome this challenge, and governments should explore collaborative approaches to build on successes and accelerate market transformation. Industrial, health and retail are among the sectors where a body of leading organisations with substantial market presence exist, and all levels of government can support industry-led groups to accelerate action in these sectors.

SOLUTION

Local governments could facilitate leadership groups for building sectors such as commercial, industrial, health and retail, within their own local government area or in collaboration with neighbouring councils. Ideally, the groups are led by building owners and other industry stakeholders to connect people, generate awareness of best practices, demonstrate opportunities, develop industry skills and capability and drive innovation.

BETTER BUILDINGS PARTNERSHIP

The City of Sydney is a founding partner of the Better Buildings Partnership (BBP).[9] Established to bring together Sydney's leading property owners and industry influencers to provide green leadership and sustainable innovation for Sydney's commercial and public buildings. In the 2022 financial year, BBP members were responsible for 64 per cent of Sydney CBD office space and reduced stationary emissions intensity by 82 per cent compared with FY 2006.

BBP members work on projects to engage tenants, facility and asset managers and other building owners and share sustainability best practices. BBP has produced several practical resources which are available for anyone to use. These include:

- A best practice electrification toolkit for asset and facilities managers to accelerate electrification across national commercial office portfolios (designed to complement GBCA's practical guides to electrification[10])
- A green leasing standard
- Operational waste guidelines
- Office stripout waste guidelines.

RECOMMENDATION 3.4

DRIVE DEEP ENERGY EFFICIENCY AND ELECTRIFICATION RETROFITS FOR EXISTING HOMES

BUILDING TYPE:

Residential

LIFECYCLE STAGE:

Retrofit

IMPACT:

EASE:

COST EFFECTIVENESS:

ISSUE

Recent reforms to the National Construction Code have set minimum standards at 7 Star NatHERS for the energy performance of new homes. The introduction of minimum efficiency standards for residential buildings was in after the construction of most of Australia's homes.[11] Improving energy efficiency and thermal comfort and electrifying our existing housing stock is a considerable challenge requiring deep retrofits. Improving the energy performance of existing homes can also contribute to an optimised whole energy system by linking appliance upgrades with efficiency improvements like insulation and shading.

Understanding the challenges of different housing types is also critical. For example, tackling energy efficiency, electrification and integrating renewable energy is more complex in apartment buildings than in detached homes. At all levels of government, it is essential to work on ways to understand better apartment building energy consumption and ways to support decarbonisation for every type of home.

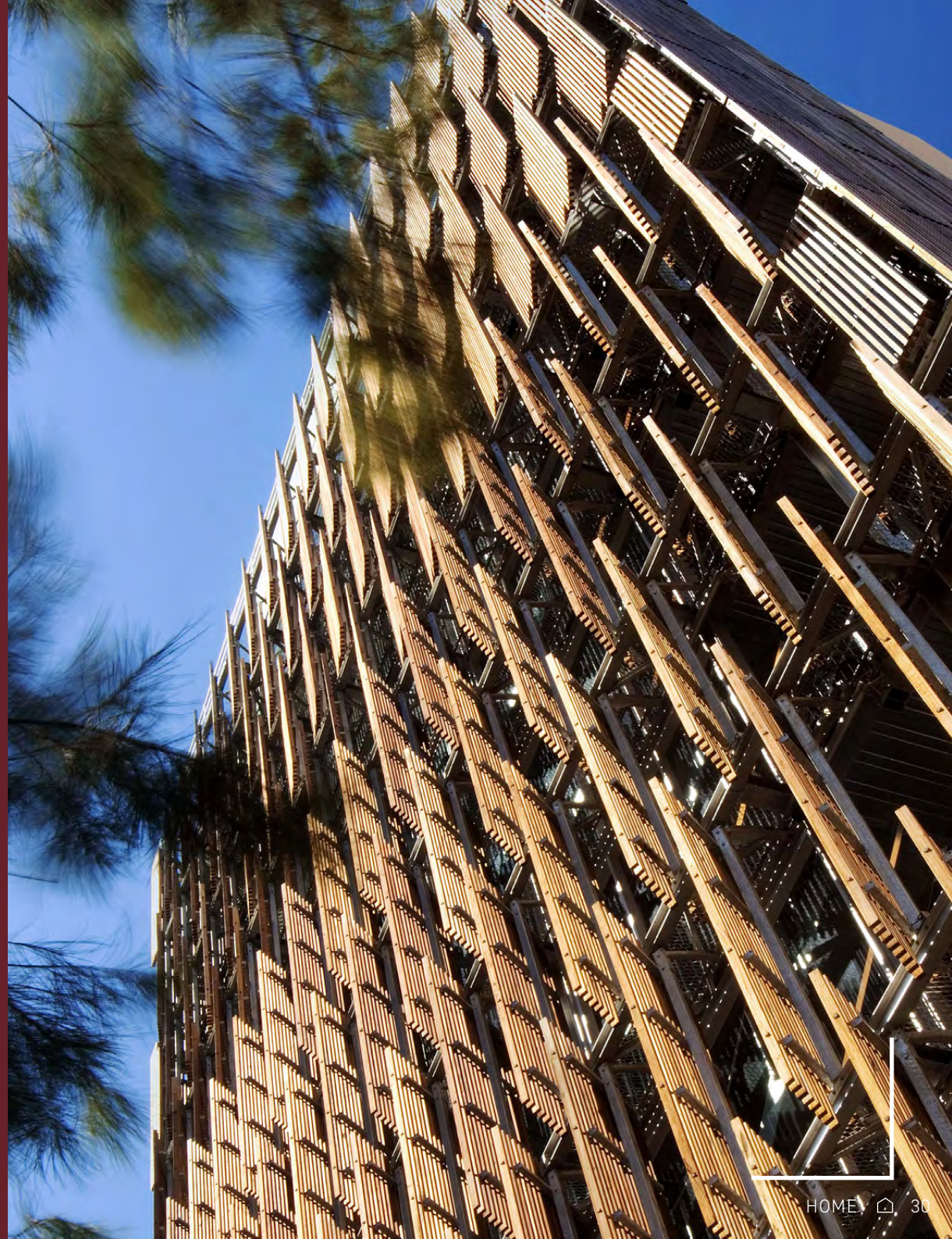
SOLUTION

Some local councils offer incentives to drive the uptake of energy-saving appliances and technologies. Still, these should be aligned with federal and state & territory-led funding and programs to drive deeper retrofits. Local government can use its interface with the community to raise awareness of the support available for retrofitting homes, consider subsidising NABERS ratings and/or tailored energy action plans where appropriate, and explore opportunities to provide innovative finance mechanisms or funding models.

DOMESTIC ENERGY EFFICIENCY UPGRADES

The Domestic Energy Efficiency Upgrades initiative[12] uses funding provided by the UK's central government to leverage the Milton Keynes City Council's knowledge and connection with community to understand the individual needs of each household and provide the retrofit works required. The project employed an estate-based methodology, which started from an energy conservation basis and then scaled up to include comprehensive benefits across people, property, places, and the planet.
The retrofit process consists of an individual retrofit assessment, pre- and post-work airtightness testing, undertaking energy efficiency works alongside planned maintenance work for any social housing in the cohort and post-work monitoring and evaluation.

THEME 4
GOVERNMENT LEADERSHIP



GOVERNMENT LEADERSHIP

4.1 **Commit to achieving zero-carbon-ready new and existing government-owned and leased buildings by 2030**

4.2 Commit to applying trusted, robust and credible building rating systems such as Green Star and NABERS in all new government projects and existing assets

4.3 Inform consumers on residential energy efficiency and electrification

4.4 Form coalitions of councils to drive sustainable outcomes at a local level

RECOMMENDATION 4.1

COMMIT TO ACHIEVING ZERO-CARBON-READY

new and existing government-owned and leased buildings by 2030

BUILDING TYPE: Government, Commercial

LIFECYCLE STAGE: All stages

IMPACT: ☑ ☑ ☑

EASE: ☑ ☑ ☐

COST EFFECTIVENESS: ☑ ☑ ☐

ISSUE

Many local governments across Australia have demonstrated visionary leadership by setting ambitious zero carbon operational targets. Local governments typically own and manage a diverse range of building assets of all ages, uses and sizes. As well as showing leadership, setting zero carbon targets for their assets can save councils money, lead to similar commitments from other property owners in the local community, and build skills and capability in the local industry.

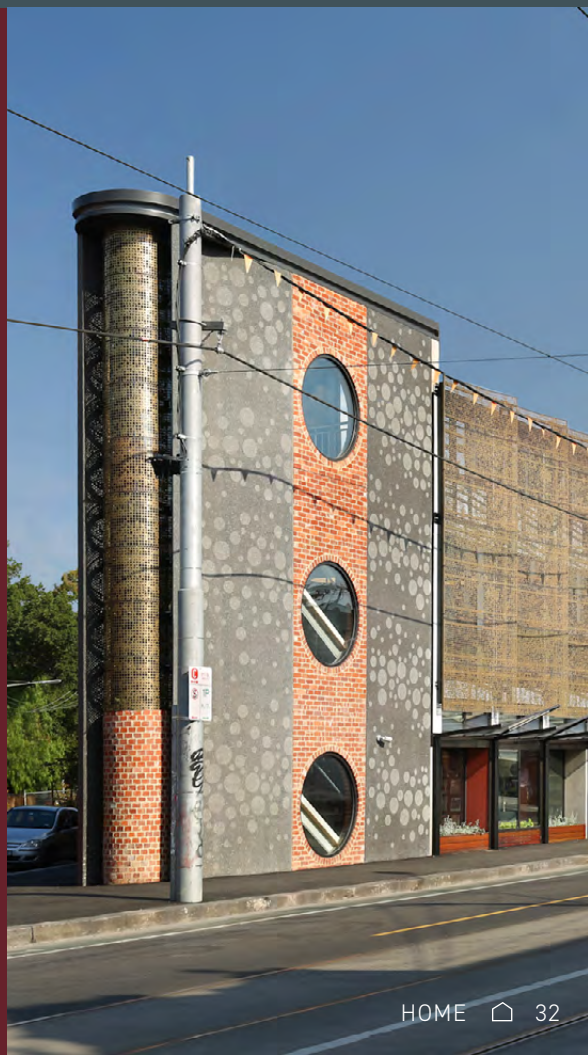
SOLUTION

If they haven't already, councils should set zero carbon targets and support these commitments with a clear plan for achieving zero-carbon-ready buildings for all new and existing council assets by 2030. Measures could include strong minimum standards for new buildings and fitouts, targets for energy efficiency and requirements regarding electrification, renewable energy (onsite and/or offsite) and offsets.

The benefits of NABERS energy ratings should be augmented with a holistic building rating through Green Star wherever appropriate, and mechanisms to improve compliance and implementation should be introduced or enhanced.

A ROADMAP TO 2030 AND BEYOND

The City of Melville in WA declared a climate emergency in 2022. They set a target to achieve net zero emissions city-wide by 2050 and for their organisation to achieve net zero emissions by December 2030. The City of Melville has established an organisational annual carbon budget and developed a Climate Action Policy,[13] which outlines how it will achieve their goals. The policy includes committing to all city assets, infrastructure, facilities, and maintenance to transition to carbon neutral or carbon negative by 2030 (or before).



RECOMMENDATION 4.2

COMMIT TO APPLYING TRUSTED, ROBUST AND CREDIBLE BUILDING RATING SYSTEMS

such as Green Star and NABERS in all new government projects and existing assets

BUILDING TYPE:

Government

Commercial

LIFECYCLE STAGE:

All stages

IMPACT:

EASE:

COST EFFECTIVENESS:

ISSUE

The private sector has long embraced voluntary rating and benchmarking systems such as Green Star and NABERS to establish the design parameters and verify the performance of high-quality buildings. As a sector, local government is one of the most significant users of Green Star, but there is still enormous potential for improving the sustainability performance of local government assets. By leveraging tools such as Green Star and NABERS through procurement processes, local governments can integrate requirements to help lower emissions in public projects, create a market for sustainable building products and improve community facilities.

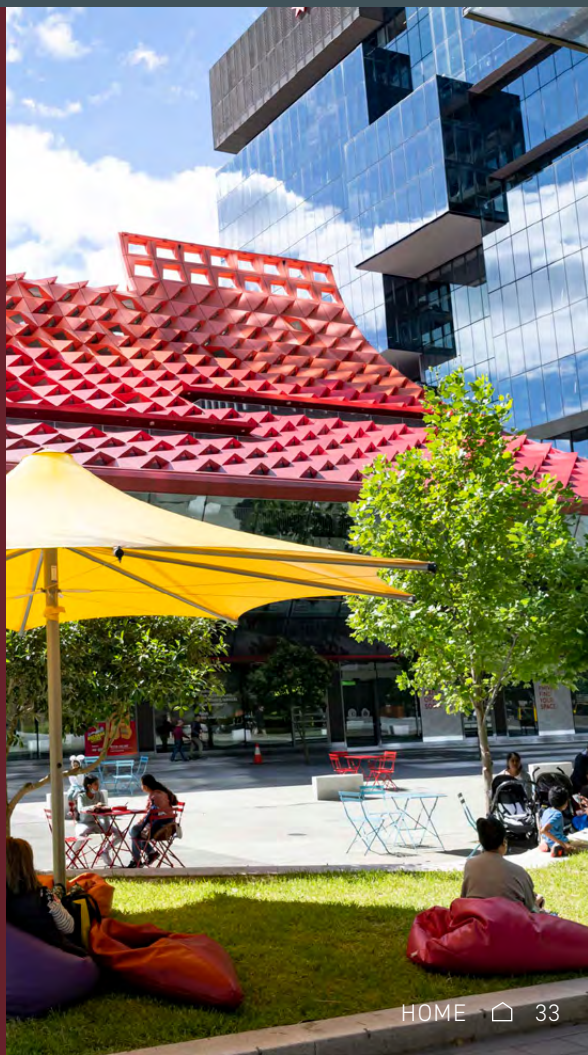
SOLUTION

Local governments should commit to using trusted, robust and credible building rating systems such as Green Star and NABERS for all appropriate council projects.
A commitment to achieve NABERS and/or Green Star certification can demonstrate how project outcomes align with council sustainability policy and targets. It also sends a clear message to local industry that the council is committed to achieving sustainable results, which helps to drive upskilling and capacity building.

SUSTAINABILITY IN PARRAMATTA SQUARE

The City of Parramatta, NSW, is implementing various programs to reduce its environmental footprint. As part of its redevelopment of the heart of the Parramatta CBD, City of Parramatta has committed to achieving 5 Star Green Star ratings for all buildings across the six stages of Parramatta Square's development.[14]

So far, One Parramatta Square, 3 Parramatta Square, 4 Parramatta Square and PHIVE (5 Parramatta Square) have achieved a range of Green Star and NABERS certifications, with more projects planned and committed to achieving Green Star and NABERS ratings.



RECOMMENDATION 4.3

INFORM CONSUMERS ON RESIDENTIAL ENERGY EFFICIENCY AND ELECTRIFICATION

BUILDING TYPE:

Residential

LIFECYCLE STAGE:

Design | Construction | Sale/lease | Occupation

IMPACT: ☑ ☑ ☑

EASE: ☑ ☑ ☑

COST EFFECTIVENESS: ☑ ☑ ☑

ISSUE

Knowledge limitations can lead to market failures when consumers cannot make informed choices about the energy efficiency or technology within their homes, and there is growing research to show that consumers need clarification for sustainability jargon in the residential sector.

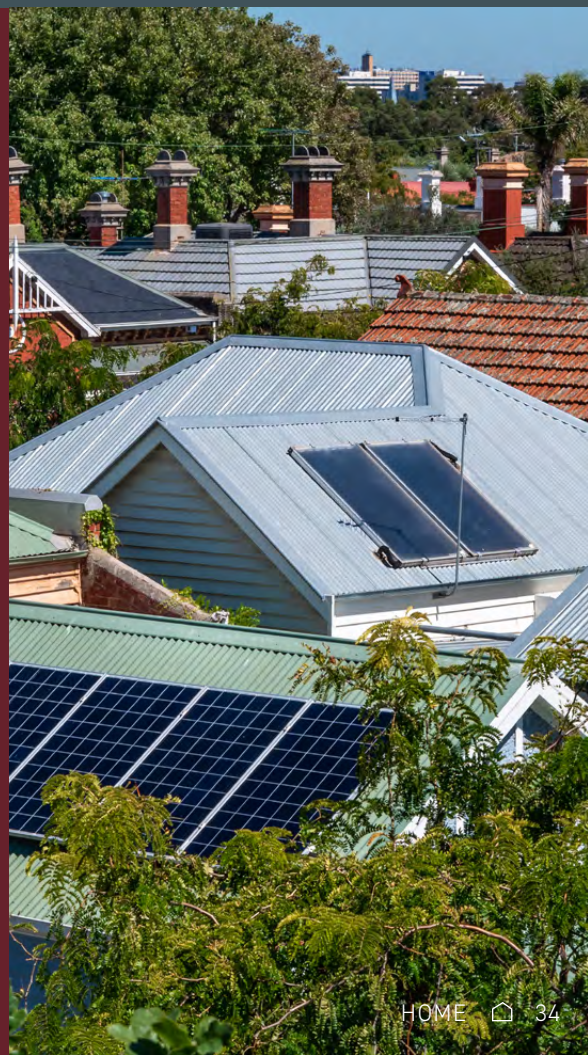
Consumers also need help to choose from the diversity and complexity of technology options and recommended behaviours. They seek decision-making shortcuts, including withdrawing or deferring to the government to solve the problem.

SOLUTION

Working with other governments, industry and academia, local governments should drive awareness and behaviour change regarding sustainable housing by providing information and social support to home buyers and renovators at crucial decision-making moments. This information, which could include details of available financial incentives (see Recommendation 3.4), must consider timing and context to ensure effectiveness. Councils should consider programming in mainstream broadcast media, social media and commercial product placement to accelerate the adoption of high-performance homes and support early adopters to enter the market at scale.

BUILD SMARTER

Christchurch City Council in New Zealand offers a range of resources and services to help people renovate, build and operate healthier, more efficient homes.[15] Homeowners renovating or building a home can book a free two-hour consultation with a specialist Eco Design Advisor. Homeowners and landlords can secure a free healthy home assessment and access advice about financial support available to improve existing homes' health and energy efficiency under the Healthier Homes Canterbury program.



RECOMMENDATION 4.4

FORM COALITIONS OF COUNCILS TO DRIVE SUSTAINABLE OUTCOMES AT A LOCAL LEVEL

BUILDING TYPE:

All buildings

LIFECYCLE STAGE:

All stages

IMPACT: ☑ ☑ ☑

EASE: ☑ ☑ ☑

COST EFFECTIVENESS: ☑ ☑ ☑

ISSUE

Local governments have good connections and engagement with their communities but need more resources to implement large-scale programs to drive sustainability outcomes like Federal, State, and Territory Governments can. Many councils amplify their reach and available resources by working together to advocate with a louder voice and tackle big or complex issues such as climate change and water management.

SOLUTION

Forming alliances and working together can mean that councils can share and pool resources, learn from each other, leverage available funds, pursue joint advocacy programs and reach more people. Local governments could utilise existing or new networks to develop and execute plans to achieve goals such as zero-carbon-ready, resilient buildings, zero embodied carbon and electrification.

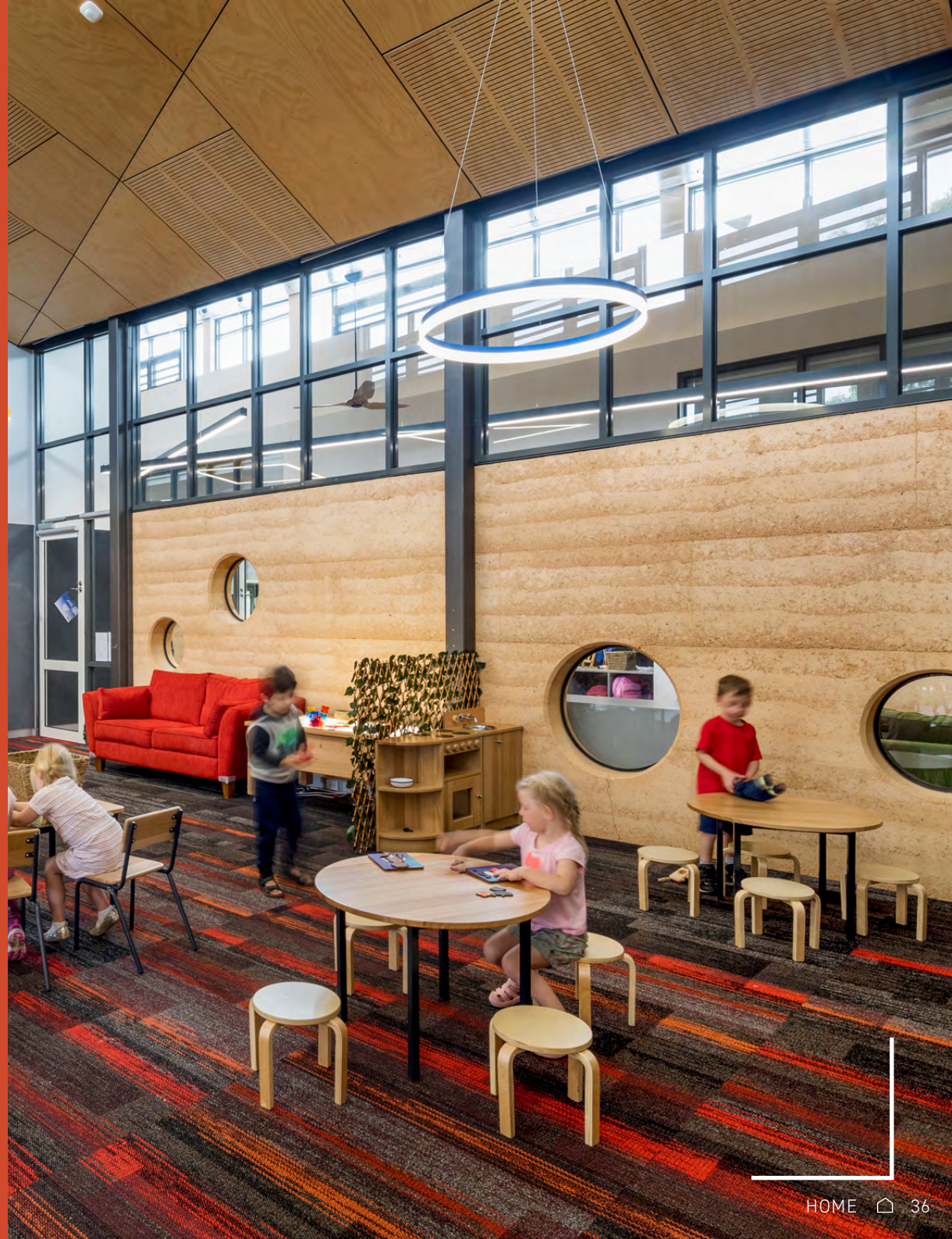
ELEVATING ENVIRONMENTALLY SUSTAINABLE DEVELOPMENT TARGETS

The Council Alliance for a Sustainable Built Environment (CASBE) in Victoria brings councils together to achieve sustainability outcomes, that would be difficult for councils to achieve independently. Twenty-four of CASBE's 40+ member councils are working together on the Elevating ESD Targets project.[16] This project has developed a proposed amendment to the Victorian planning scheme, which would lift ESD targets and requirements for new buildings and developments in Victoria.

The proposed amendment will cover:

- Zero carbon operational energy
- Measured reduction in embodied energy
- Mandatory green infrastructure provisions
- Increased active transport infrastructure
- Improved integrated water management provisions
- Improved waste management infrastructure
- Improved climate resilience.

THEME 5
ROBUST RATING TOOLS FOR DIFFERENT BUILDING TYPES



ROBUST RATING TOOLS FOR DIFFERENT BUILDING TYPES

5.1 **Drive the broader application of trusted, robust and credible rating systems such as Green Star and NABERS in the community**

5.2 Endorse and contribute to a single national rating scheme for home energy performance

RECOMMENDATION 5.1

DRIVE THE BROADER APPLICATION

of trusted, robust and credible rating systems such as Green Star and NABERS in the community

BUILDING TYPE:

All buildings

LIFECYCLE STAGE:

Design Construction Retrofit Occupation

IMPACT:

EASE:

COST EFFECTIVENESS:

ISSUE

While many local governments are committing to reducing emissions and working towards zero-carbon-ready buildings in their portfolios, influencing the wider community to aim for net zero is much more challenging, particularly outside of capital city CBDs. Many local governments are keen to explore options for encouraging or requiring sustainability outcomes beyond minimum requirements for new buildings.

However, challenges such as planning systems established and administered by the state government and a lack of ability for councils to enforce compliance with sustainability requirements can add complexity to this aim.

Councils may also face challenges with 'equivalency'. This is when sustainability requirements are set, but project proponents use tools or frameworks they judge to be equivalent to those specified but may not be as robust or credible or attempt to demonstrate equivalent achievement through self-assessment instead of independent verification.

SOLUTION

Local government should consider how rating systems such as Green Star and NABERS could be encouraged within their jurisdiction. By including the use of planning and other incentives (see Recommendation 2.1), setting requirements for specific projects to achieve certain sustainability outcomes in local planning laws and mechanisms, raising awareness about NABERS and Green Star and how using these rating tools can deliver a range of benefits as well as compliance (for example, J1V1 [NABERS] and J1V2 [Green Star] are verification pathways in the National Construction Code [2019 and 2022]). To avoid equivalency issues, councils should ensure that policy wording and expectations are precise and not allow room for ambiguity.

ENVIRONMENTALLY SUSTAINABLE DESIGN IN PLANNING

Under the Yarra Planning Scheme,[17] the City of Yarra in Victoria requires medium and large developments to achieve best practices in environmentally sustainable growth, from design to construction and operation. The City of Yarra encourages developments to use credible rating tools such as BESS, Green Star and NABERS to demonstrate how they meet best practice benchmarks and no longer accepts self-assessed 'equivalency' with rating tool benchmarks for particular projects or its capital works program.

RECOMMENDATION 5.2

ENDORSE AND CONTRIBUTE TO A SINGLE NATIONAL RATING SCHEME

for home energy performance

BUILDING TYPE: Residential

LIFECYCLE STAGE: Sale/lease, Occupation

IMPACT: ☑ ☑ ☑

EASE: ☑ ☑ ☑

COST EFFECTIVENESS: ☑ ☑ ☑

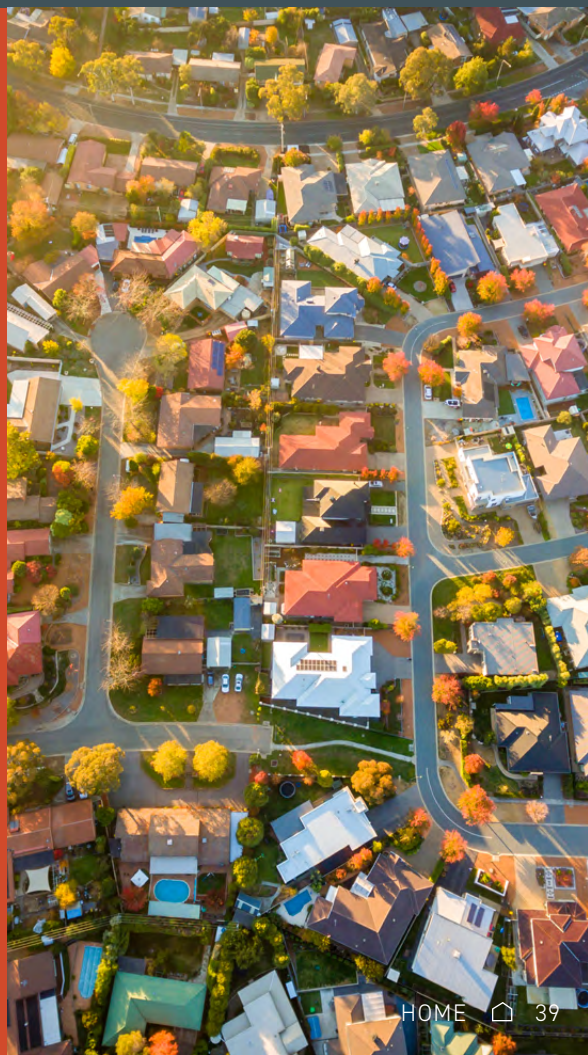
ISSUE

Australian homeowners and renters value energy performance but need a credible and widely accepted benchmark to easily assess homes' energy efficiency. A single, robust rating scheme consistently applied across the country would make it easier to compare the efficiency of homes and create a market for better-performing homes whilst providing added consumer protection for buyers and tenants. Work has been underway for several years on developing a rating tool for homes, but it has yet to be made available for public use.

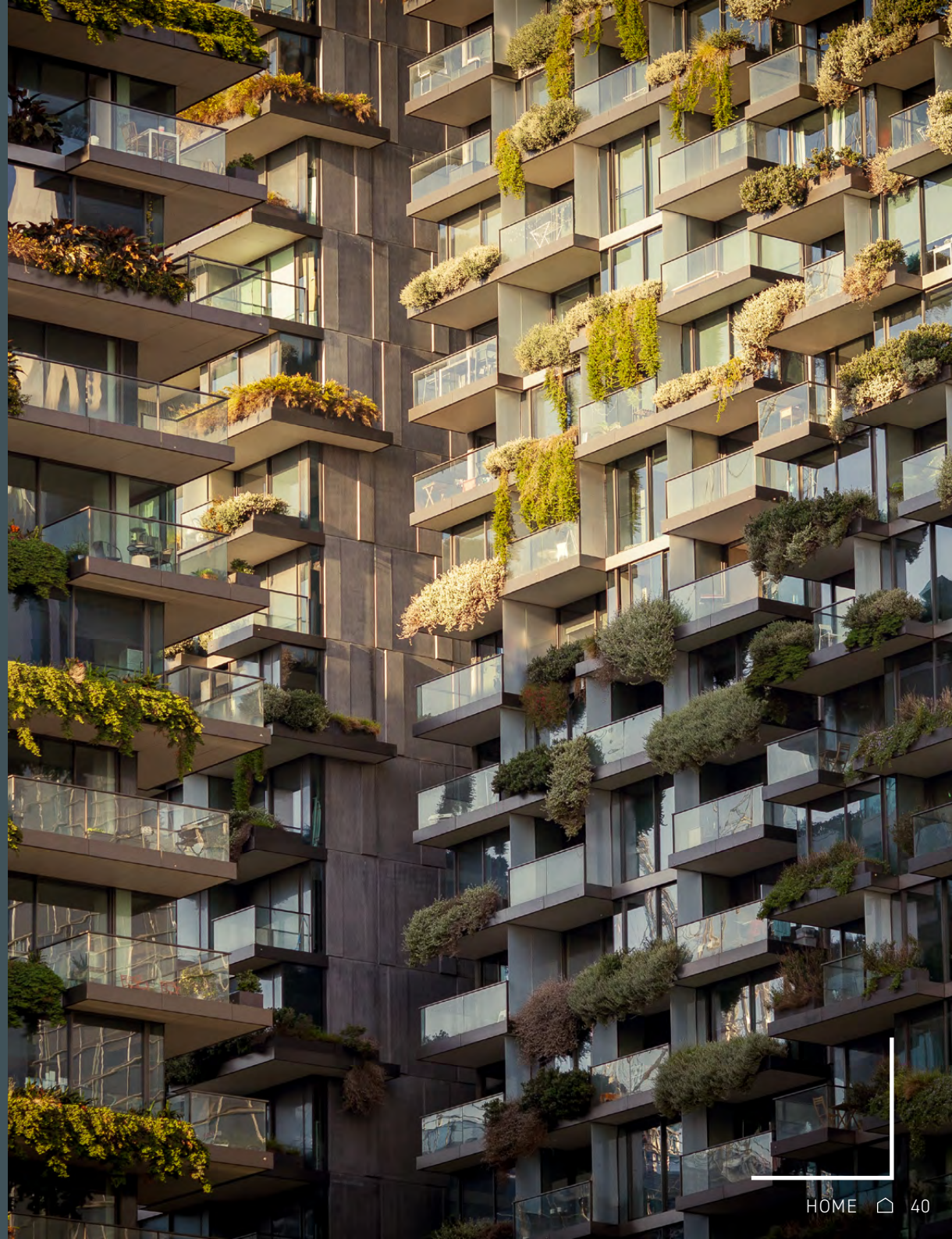
SOLUTION

Working with Federal, State and Territory Governments, local governments should support and contribute to the development of a single, coherent national rating scheme to facilitate disclosure of performance in residential buildings that includes:

- Benchmarks for market comparison of best practice sustainability performance
- Disclosure of the status of solar PV provision, energy storage, EV charging, and electrification of heating and hot water systems
- A single input tool for calculating the rating and a single, public-facing communication of results to avoid disparities and confusion
- A best practice governance model based on NABERS that brings Federal, State and Territory Governments and industry together to manage benchmarks for new homes collectively.



THEME 6
TOWARDS ZERO EMBODIED CARBON



TOWARDS ZERO EMBODIED CARBON

6.1 **Adopt a credible national framework for measuring embodied carbon**

6.2 Introduce embodied carbon reduction targets for government projects

6.3 Support Australian leadership in high-performing and circular building products

RECOMMENDATION 6.1

ADOPT A CREDIBLE NATIONAL FRAMEWORK

for measuring embodied carbon

BUILDING TYPE:

All buildings

LIFECYCLE STAGE:

Design | Construction | Retrofit

IMPACT: ☑ ☑ ☑

EASE: ☑ ☑ ☑

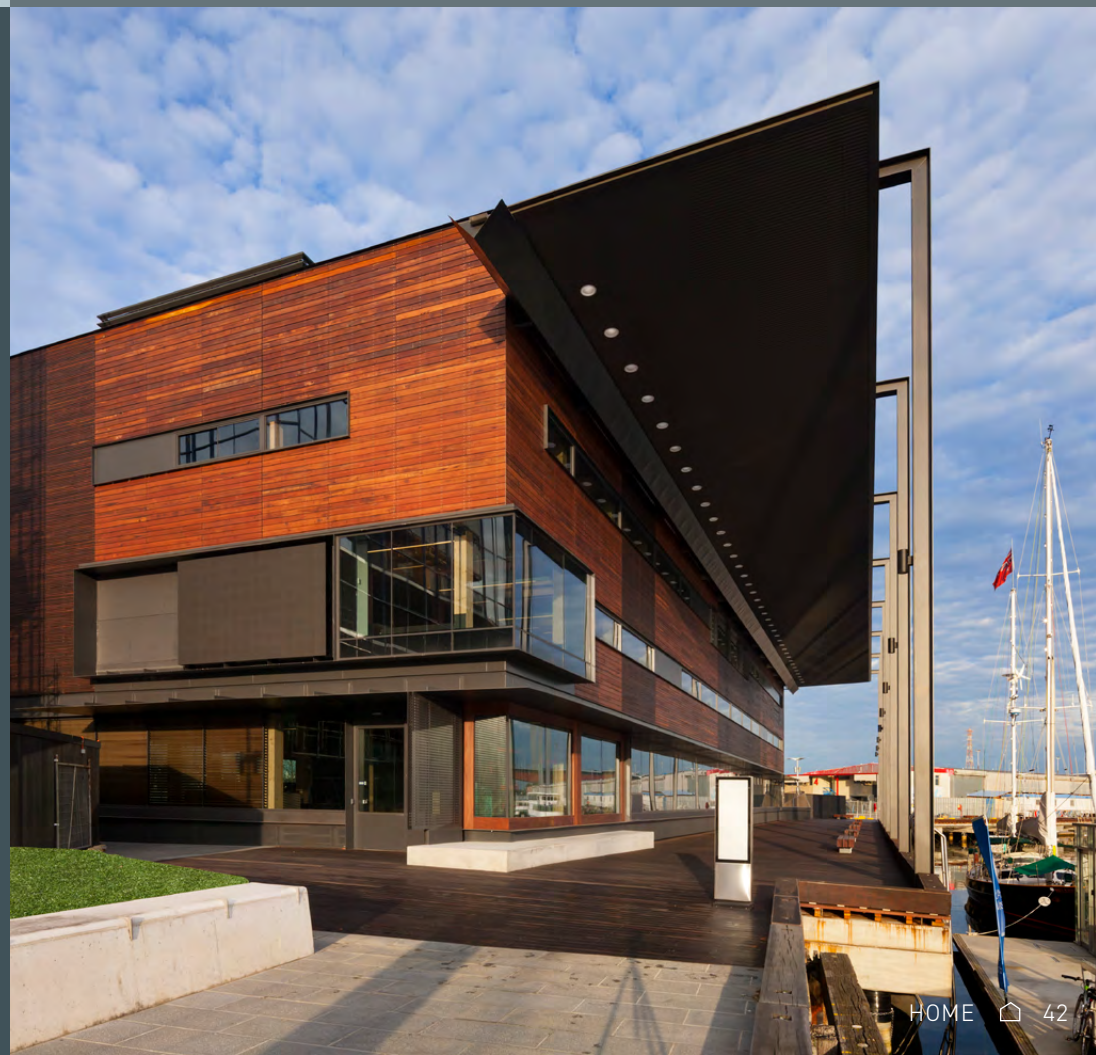
COST EFFECTIVENESS: ☑ ☑ ☑

ISSUE

The World Green Building Council defines embodied carbon as "carbon emissions associated with materials and construction processes throughout the whole lifecycle of a building or infrastructure".[18] In 2019, it comprised 16 per cent of Australia's built environment emissions. Without intervention, this share will balloon to 85 per cent in 2050, when Australia must achieve net zero emissions in line with the Paris Agreement.[19] Australia currently has no accepted framework for measuring embodied carbon in a trusted, accurate and repeatable way.

SOLUTION

There is an urgent need to develop and adopt a national framework to measure, verify and compare embodied emissions in new buildings and major refurbishments. It will be essential to allow building owners and investors to set robust and measurable targets for reducing embodied emissions in buildings. The NSW Government is developing an embodied carbon tool through the NABERS program. Once it is complete, local governments should embed it into their procurement and encourage its adoption by projects in their jurisdiction. Councils could also seek to join the Materials and Embodied Carbon Leaders Alliance (MECLA) which has resolved to establish a dedicated working group for Councils.



RECOMMENDATION 6.2

INTRODUCE EMBODIED CARBON REDUCTION TARGETS

for government projects

BUILDING TYPE:

Government

Commercial

LIFECYCLE STAGE:

Design

Construction

Retrofit

IMPACT:

EASE:

COST EFFECTIVENESS:

ISSUE

As buildings electrify and the grid decarbonises, embodied emissions will increase from 16 to 85 per cent of the built environment's total carbon footprint by 2050 if we continue business as usual. Some industry leaders are already taking voluntary action to reduce these emissions. Still, government leadership and commitment by local governments to reduce embodied carbon in their projects will be vital.

SOLUTION

Local governments should commit to reducing their embodied carbon footprint to achieve net zero by 2050 or before. Measures could involve minimum standards for new buildings and fitouts with targets to increase over time. They will contribute to developing skills and expertise in the market and reduce the cost of low-carbon materials through economies of scale. While not the focus of Every Building Counts, a commitment from governments to embed targets for reduced embodied carbon in all infrastructure projects has even greater potential to drive positive change in the supply chain. There are also many shared benefits to be unlocked by pooling resources and research and sharing information between the property and infrastructure sectors.

RECOMMENDATION 6.3

SUPPORT AUSTRALIAN LEADERSHIP IN HIGH-PERFORMING AND CIRCULAR BUILDING PRODUCTS

BUILDING TYPE:

All buildings

LIFECYCLE STAGE:

All stages

IMPACT:

EASE:

COST EFFECTIVENESS:

ISSUE

The building materials sector accounts for eight per cent of Australia's total emissions and has an annual economic value of $70 billion.[20] Construction and demolition waste accounts for over 40 per cent of all waste in Australia.[21] Finding ways to minimise waste and creating a supply chain that can deliver transparent, healthy, low-carbon products that are part of a circular economy is urgent for the health of our planet but will also offer a vast range of economic and social benefits.

SOLUTION

Specifying high-performing, low-carbon, circular building products in procurement is an essential opportunity for local governments to promote circular economy outcomes. Local governments can identify, support and showcase local businesses producing circular building products and delivering circular outcomes. Local governments can leverage their unique position in the waste sector to develop waste management plans that aim for 100 per cent diversion of waste from landfills and explore and support economic opportunities for separated waste streams to flow to local start-ups and more established industries.

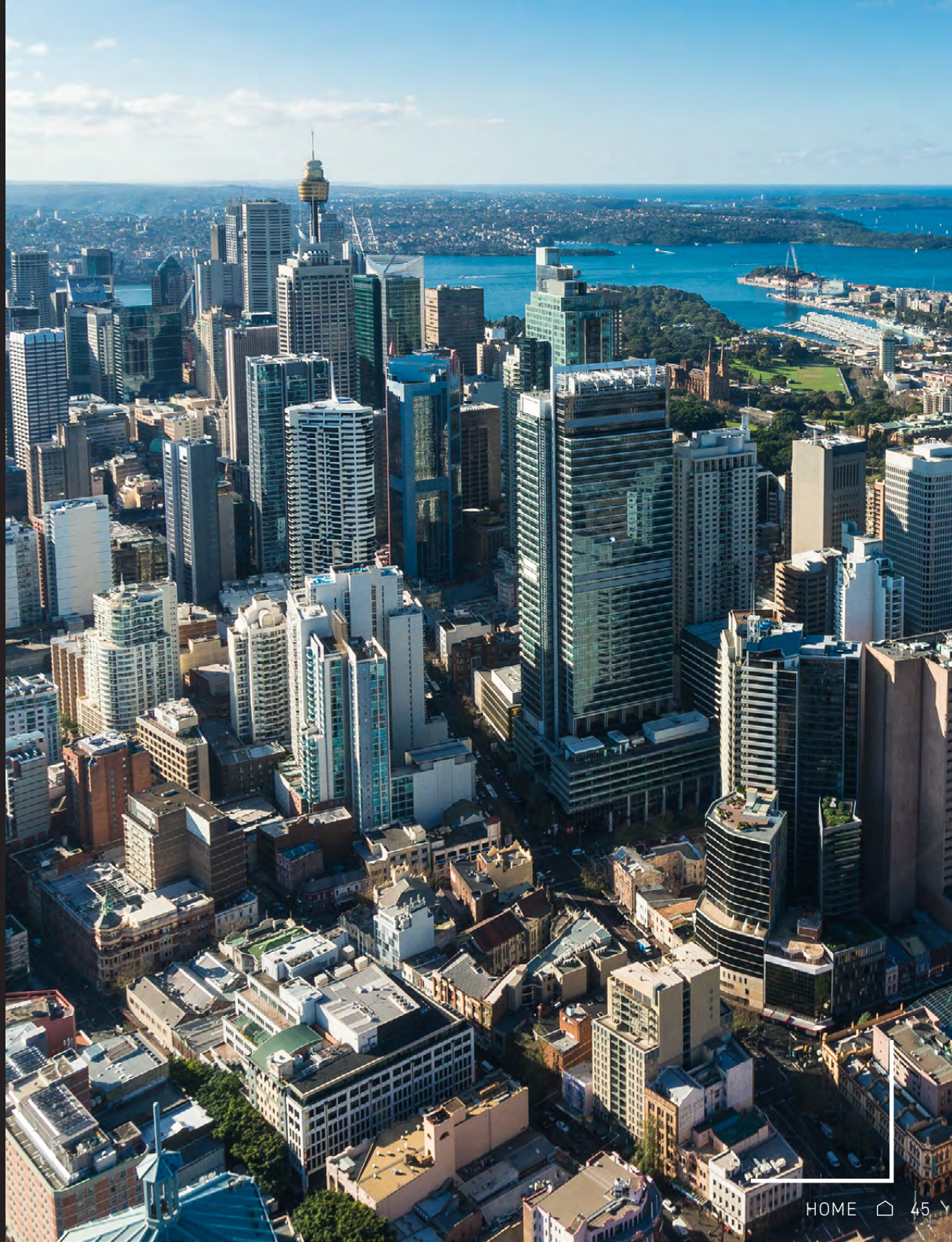
TAKING BACK CONTROL OF RECYCLING

The Central Adelaide Waste and Recycling Authority (CAWRA)[22] is a joint initiative of the Cities of Charles Sturt and Port Adelaide Enfield in SA.

Formed to take back control of recycling in their communities and enable a local circular economy, CAWRA's new Material Recovery Facility (MRF) will utilise the latest optical sorting technology to produce clean commodities ideal for developing local markets.

It aims to restore confidence in kerbside recycling for residents and enable councils to work more effectively with local recycling businesses, recycle more materials and support the circular economy by selling recovered commodities.

APPENDIX:
SOURCES



Introduction

Australian Government Department of Climate Change, Energy, the Environment and Water (2023); Australian Government, Department of Industry, Science, Energy and Resources, National Energy and Emissions Audit (2020).

Joint Media Release, Australia's International Climate Engagement; Media Release on National Energy Performance Strategy.

ASBEC, Low Carbon, High Performance (2016); ASBEC, Unlocking the Pathway: Why Electrification is the Key to Net Zero Buildings (2022).

UN Press Release, Secretary-General Calls on States to Tackle Climate Change 'Time Bomb' through New Solidarity Pact, Acceleration Agenda, at Launch of Intergovernmental Panel Report.

Theme 1: Zero-carbon-ready Resilient Building Plan

[1] Case study p.16 source: https://www.cityofadelaide.com.au/about-adelaide/our-sustainable-city/carbon-neutral-adelaide/

[2] Upgrading to all-electric homes is estimated to be relatively easy for around 40% of all Australian households. The rest face one or more barriers. Grattan Institute, Getting off gas: Why, how and who should pay? (2023).

Theme 2: Electrification

[3] ASBEC, Unlocking the Pathway: Why Electrification is the Key to Net Zero Buildings (2022)

[4] Case study p.22 source: https://zerocarbonmerri-bek.org.au/solar-and-energy-financial-support-for-residents-on-a-low-income/

[5] Australian Energy Market Operator, Integrated System Plan (2021).

[6] Case study p.23 source: https://zerocarbonmerri-bek.org.au/energy-switch/go-all-electric/

Theme 3: Incentivise High Performance

[7] Case study p.26 source: https://www.brisbane.qld.gov.au/planning-and-building/urban-design-in-brisbane/design-strategy-and-guidelines/brisbane-green-buildings-incentive-policy

[8] Case study p.27 source: https://www.mornpen.vic.gov.au/About-Us/Business-support/Sustainable-solutions/Environmental-Upgrade-Finance-EUF

[9] Case study p.28 source: https://www.betterbuildingspartnership.com.au/

[10] GBCA, A practical guide to electrification: For new buildings; A practical guide to electrification: For existing buildings (2022).

[11] COAG Energy Council, Report for Achieving Low Energy Existing Homes (2019).

[12] Case study p.29 source: Domestic Energy Efficiency Upgrades, Netherfield, Milton Keynes City Council. https://www.local.gov.uk/case-studies/domestic-energy-efficiency-upgrades-netherfield-milton-keynes-city-council

Theme 4: Government Leadership

[13] Case study p.32 source: https://www.melvillecity.com.au/waste-and-environment/environmental-sustainability/our-climate-emergency-declaration

[14] Case study p.33 source: https://www.cityofparramatta.nsw.gov.au/environment/environment-and-sustainability/sustainable-business#:~:text=committing%20to%20achieve%205%20Star,criteria%20in%20our%20Procurement%20Policy

[15] Case study p.34 source: https://ccc.govt.nz/environment/sustainability/build-smarter/

[16] Case study p.35 source: https://www.casbe.org.au/elevating-esd-targets/

Theme 5: Robust Rating Tools for Different Building Types

[17] Case study p.38 source: https://www.yarracity.vic.gov.au/services/planning-and-development/planning-applications/environmentally-sustainable-design-in-planning

Theme 6: Towards Zero Embodied Carbon

[18] World Green Building Council, Advancing Net Zero Status Report 2020 (2020).

[19] GBCA & thinkstep ANZ, Embodied Carbon and Embodied Energy in Australia's Buildings (2021).

[20] GBCA, Driving responsible products in the built environment: Changes to Green Star Buildings and our strategy for the future (2021).

[21] Blue Environment for Department of Agriculture, Water and Environment, National Waste Report 2020 (2020).

[22] Case study p.44 source: https://www.cityofpae.sa.gov.au/live/waste/materials-recovery-facility

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