



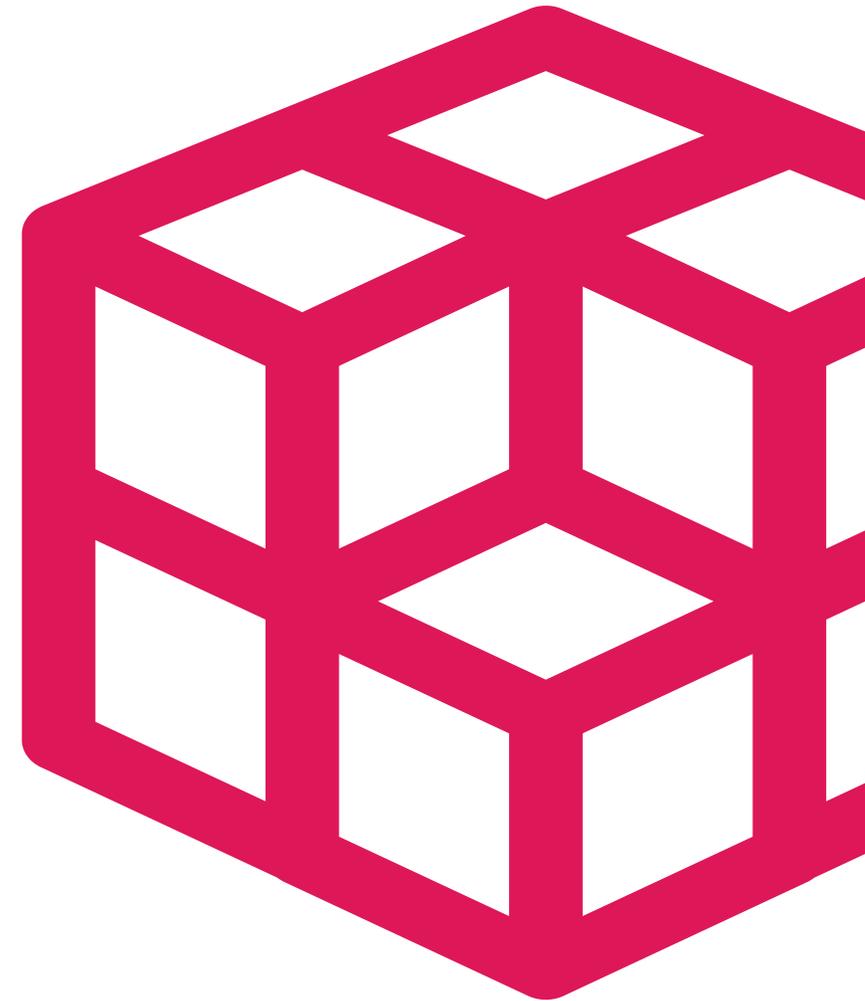
# MID-TIER COMMERCIAL OFFICE BUILDINGS IN AUSTRALIA

A national pathway to improving energy productivity

November 2015

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# Executive Summary

**Improving energy productivity has been identified as one of three key themes in the Australian Government's Energy White Paper, which sets out Australia's policy approach to energy over the coming years. Improving building performance is widely regarded as one of the most cost-effective opportunities to deliver energy and greenhouse gas emissions reductions.**

Commercial buildings account for about 10% of the nation's overall energy consumption and commercial *office* buildings for approximately 2.5%<sup>1</sup>.

Many premium and A-grade buildings have already undertaken energy efficiency upgrades and either have, or are moving towards, Green Star certification and high (4 star+) NABERS Energy ratings. The rest of the commercial office building sector – the B, C, and D-grade assets (generally referred to as 'mid-tier') have lagged significantly in implementing energy retrofits and have lower NABERS Energy ratings (average of 2.4 stars), if at all.

The Australian Government Department of Industry Innovation and Science commissioned the Green Building Council of Australia (GBCA) to undertake this project which was also supported by Sustainability Victoria, City of Melbourne and EY. The project aimed at gaining a greater understanding of the mid-tier commercial office buildings sector, including the key stakeholders, the barriers to uptake of energy efficiency initiatives and the opportunities to drive change.

The mid-tier commercial office building project had three components:

- the development of a research report by EY, *Mid-tier commercial office buildings in Australia: Research into improving energy productivity*
- a facilitated workshop with 50 participants from industry and all levels of government
- the development of a pathway document (this document).

Mid-tier buildings are commonly defined as the B, C and D-grade buildings, usually found in the capital city CBDs and fringe areas, suburban centres and some regional towns.

It is estimated that there could be as much as 64 million square metres of commercial office space in Australia. Whilst the top-tier premium and A-grade buildings make up around 12.7 million square metres, the rest of this space could be classified as mid-tier (around 52 million square metres).

Extrapolating findings from a report on retrofitting office buildings in Victoria, indicates that there could be up to 80,000 mid-tier buildings across the country.

Mid-tier office buildings are generally under 10,000 square metres, with a diverse ownership profile. They have a lower level of energy efficiency than premium or A-grade assets often due in part to being older buildings with original HVAC systems, minimal controls and outdated lighting. It is rare for these buildings to have an on-site dedicated team for facilities management. Vacancy rates are typically higher and lease terms are typically shorter than those of premium or A-grade assets.

The ownership profile of mid-tier office buildings is a mix of corporate and non-corporate, foreign and domestic owners, with a range of investment strategies, portfolio size, and awareness of energy efficiency. Some of the larger owners manage a portfolio of buildings whilst some of the family-owned investments have a single building, which may not necessarily be part of their core business. Other owners of mid-tier property include professional industry organisations, universities and other educational bodies, and not-for-profits including charities and religious organisations.

The business case for energy efficiency upgrades and retrofits is highly dependent on the circumstances of different building owners as well as tenants. A multi-faceted approach as well as a variety of communication channels needs to be employed to engage with these diverse stakeholders.

Tenants of mid-tier commercial office buildings are predominantly small to medium-sized organisations, often with no corporate sustainability agenda and limited knowledge of energy efficiency. Tenancy net lettable area (NLA) can be as small as 20 square metres and as large as a few thousand square metres, sometimes occupying a whole building. The cost of rent is usually the primary concern for tenants when leasing a new space, with location a close second. Base-building outgoings and operational energy costs are often not considered. Other challenges facing tenants include barriers to accessing capital for energy efficiency upgrades, lack of time and lack of access to trusted information.

There are also a number of stakeholders beyond the building owners and tenants that have an important role to play in improving the energy efficiency and sustainability of the mid-tier commercial office building sector. They can be a strong support for, and influence on, owners and tenants, but there must also be a clear set of benefits for them in driving the shift towards more energy efficient buildings.

There have been a number of initiatives targeting energy efficiency and emissions reductions, which have had varying impacts on the mid-tier sector such as grant programs alternative funding mechanisms, legislative initiatives and awareness raising and capacity building.

The uptake of energy efficiency improvements has been slow in the mid-tier sector due to barriers such as lack of awareness, difficulty in accessing capital and information, lack of networking among mid-tier owners and tenants, split incentives, lack of skills and expertise amongst industry professionals.

The project workshop participants determined that the mid-tier commercial office building sector should aim to become 'an exemplar for energy efficiency and greenhouse gas emissions reduction'. A range of actions and initiatives have been identified that would help to achieve these outcomes and improve the energy efficiency of the mid-tier sector.

These actions fall into the following categories:

1. Develop a robust and trusted evidence base
2. Build a compelling and quantified business case for energy efficiency upgrades
3. Create a shift in awareness, knowledge and behaviour
4. Develop and identify tools to promote improved energy performance
5. Establish representative bodies and networks
6. Promote innovative financing mechanisms

# 1. Introduction

Improving energy productivity has been identified as one of three key themes in the Australian Government's Energy White Paper (released in April 2015), which sets out Australia's policy approach to energy over the coming years. The building sector has been identified as a key component of this approach.

The building sector in Australia accounts for approximately 19% of total energy consumption and 23% of overall GHG emissions<sup>2</sup>.

Commercial office buildings make up about 25%<sup>3</sup> of the GHG emissions in the building sector and half of the energy use. Improving building performance is widely regarded as one of the most cost-effective opportunities to deliver energy and greenhouse gas emissions reductions.

Whilst many premium and A-grade buildings have already undertaken energy efficient upgrades and either have, or are moving towards Green Star certification and high (4 star+) NABERS Energy ratings, the rest of the commercial office building sector – the B, C, and D-grade assets (generally referred to as the 'mid-tier') have lagged significantly in implementing energy efficiency upgrades and retrofits.

Improving energy productivity in commercial buildings can not only reduce operational costs and negative environmental impacts, but can also drive improvements in other areas such as capital and labor productivity<sup>4</sup>, as well as improve occupant health and wellbeing, help encourage economic growth and local employment and the creation of more liveable, sustainable spaces in our cities. All of this can be achieved using cost effective technologies that are well known in the market today and which are able to create savings even after the upfront costs have been factored in such as HVAC upgrades and tuning, employing economy cycles, efficient lighting upgrades with controls, use of more efficient appliances, and rationalisation.

## 1.a Impacts of policies and programs on the mid-tier commercial office building sector

**A number of energy efficiency initiatives for commercial buildings and their impact on the mid-tier sector are discussed below. These policies and programs have had varying levels of success and there is an opportunity to improve on them to better target mid-tier buildings.**

### Legislation and regulation

Regulation and initiatives underpinned by legislation have had some success in driving positive outcomes for the buildings sector overall.

Early indications show that the Commercial Building Disclosure (CBD) mandatory disclosure program has been successful in encouraging improvements to buildings and tenancies of 2000 square metres and above. Mid-tier commercial office buildings often have small office tenancies of less than 2,000 square metres, so unless the entire building is up for sale, the CBD program and the legislation which underpins it (*Building Energy Efficiency Disclosure Act 2010*) would not impact on these assets. This means that there is a large proportion of mid-tier buildings which have 'unknown' energy efficiency and therefore, presumably have low energy efficiency. Expanding this initiative by lowering the minimum threshold would impact more mid-tier buildings and potentially drive an uptake in energy efficiency improvements in this sector.

Section J in the National Construction Code addresses energy efficiency requirements but largely impacts new buildings and existing buildings only when undergoing major refurbishment. These standards have limited impact on the mid-tier sector as mid-tier buildings are generally older buildings.

The Energy Efficiency in Government Operations (EEGO) policy aims to reduce the energy consumption of Australian Government operations. This policy and equivalent policies at the state government level have had a positive effect on many buildings with government tenants. However, the EEGO policy focuses on larger office spaces ( $\geq 2,000$  square meters) and there is currently no penalty for buildings not reaching the 4.5 stars NABERS Energy requirement.

### Grants

Grant funding has had some success. The Australian Government Green Building Fund was fully subscribed and provided 318 grants between \$50,000 and \$500,000 each, but was mainly accessed by large organisations. Smaller funding programs targeted at the mid-tier sector, such as Sustainability Victoria's Energy Efficient Office Building program, have sometimes had difficulty finding interested participants. This appears to be for a range of reasons, including a lack of interest in or awareness of energy efficiency and the benefits, a reluctance to commit to any kind of capital expenditure, partly because of the interruption to cash flow, and partly because of the 'split incentive' where tenants gain more benefit from expenditure than owners.

### Alternative funding mechanisms

Alternative funding mechanisms such as Environmental Upgrade Agreements (EUAs), the 1200 Buildings program and opportunities offered by the Clean Energy Finance Corporation (e.g. Energy Efficiency Loans available through Commonwealth Bank) have had some success and produced some useful examples and case studies as well as a greater understanding of the factors in financial decision-making for this sector. However, there has been no widespread uptake of these opportunities, often due to a lack of awareness of the opportunities, and/or the benefits of using them, or because they appear to be too complicated.

Financial incentives for installing, improving or replacing energy savings equipment in businesses and households such as through the NSW Energy Savings Scheme have been successful to date, supporting projects that will deliver around 9000 gigawatt hours over their lifetimes. Similar schemes are available in some other states.

The Emissions Reduction Fund (ERF) is the centrepiece of the Australian Government's policy suite to reduce emissions. In order to bid into an auction under the ERF, the bidder must have an average abatement potential of 2000 tonnes CO<sub>2</sub>-e per annum, which can be achieved by one single project or multiple projects. Mid-tier buildings could therefore only benefit from this program if a large number of building upgrades were aggregated for a bid.

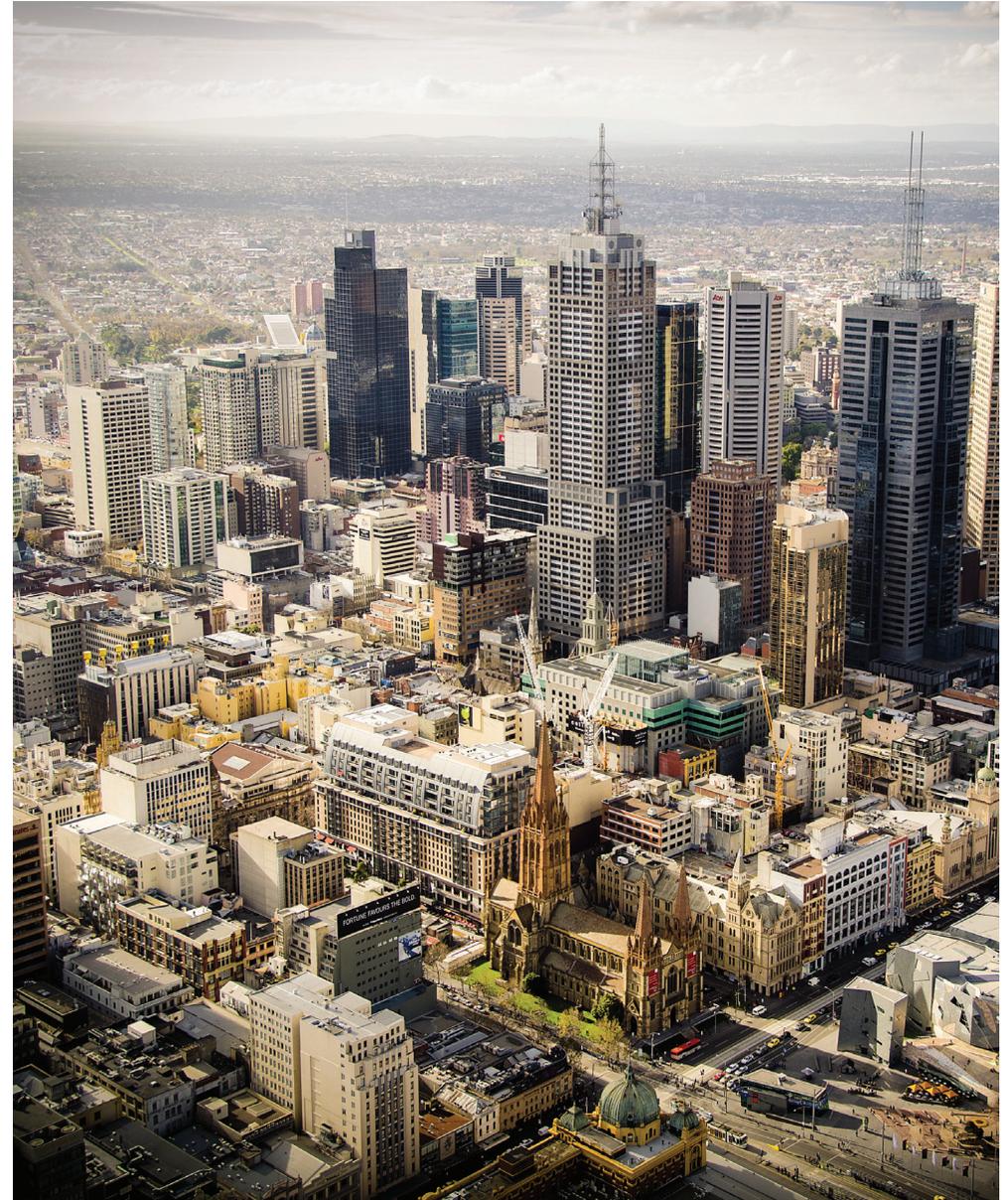
## Awareness raising and capacity building

Awareness raising and capacity building initiatives such as CitySwitch, or the City of Sydney initiatives Smart Green Business and Smart Green Apartments, have achieved good outcomes, but still have further potential.

The Energy Efficiency Information Grants (EEIG) program provided funding to industry associations and non-profits to deliver practical and tailored energy efficiency information to small and medium enterprises and community organisations. This program was fully subscribed, and details on impacts and learnings of the program should be available soon. One of the projects funded under EEIG, for example, produced the LEASA app and best practice guide targeted at SME tenants helping them to compare and rank lease spaces, tenancy energy and lighting costs and track tenancy energy bills.

## Case studies and examples

Exemplar upgrades and retrofits can be a powerful way of building business cases, particularly when a building has existing attributes that allow a relatively small investment to lift the building to the next grade. Case studies from programs such as Sustainability Victoria's Energy Efficient Office Buildings Program and City of Melbourne's 1200 Buildings Program, as well as Green Star case studies for projects undertaken on existing buildings can demonstrate a clear value proposition for some buildings and owners.



## 1. b Purpose of the mid-tier commercial office buildings project

**With the mid-tier building market estimated to make up around 80 per cent of Australia's overall building stock (by Net Lettable Area (NLA))<sup>5</sup>, governments and industry are interested in understanding how additional resources, incentives and/or legislation could shift this market from one of low energy efficiency and poor productivity to one which is characterised by cost effective, efficient use of resources alongside enhanced employee health and productivity as well as encouraging economic growth and promoting technological innovation.**

The Australian Government Department of Industry, Innovation and Science has commissioned a mid-tier commercial office buildings project which was coordinated by the Green Building Council of Australia (GBCA) and supported by Sustainability Victoria, City of Melbourne and EY. The project aimed to gain a better understanding of the mid-tier commercial building sector through desktop research and consultation and engagement with industry and government stakeholders, and to develop a pathway towards improving the energy efficiency and sustainability of mid-tier commercial buildings.

## 1. c Project process

**The mid-tier commercial office building project had three components:**

### **The development of a research report by EY, *Mid-tier commercial office buildings in Australia: Research into improving energy productivity***

This report was completed using a mix of quantitative and qualitative data from desktop research and interviews with various industry stakeholders who work with mid-tier property owners and tenants.

### **A facilitated workshop with 50 participants from industry and all levels of government**

The mid-tier commercial office buildings workshop was held at the Melbourne Town Hall on Thursday 19 March 2015, following the Green Cities 2015 conference. Fifty delegates from all levels of government and industry participated in the one day event. Industry representatives came from a broad cross-section of the property sector, and all had experience with, or connections to the mid-tier market including building owners, property agents, facility managers, environmental consultants and a number of peak industry bodies.

The list of workshop attendants can be found in Appendix 1.

To open the workshop, five presentations were given by industry and government stakeholders. These were arranged to set the scene, discuss several current mid-tier energy efficiency programs and present some of the most common mid-tier 'energy inefficiency' scenarios that persist in the market today.

These presentations covered the findings of the *Mid-tier commercial office buildings in Australia report*, initiatives implemented by City of Melbourne and Sustainability Victoria, industry experience in the market and highlighted key challenges and barriers which have been captured in this document.

### **The development of a pathway document.**

The pathway document documents key research and workshop outcomes and highlights the opportunities to build on work already underway, fill gaps and overcome barriers. This is presented in form of desired outcomes and proposed actions such as building a trusted evidence base, raising awareness and building capacity, developing and promoting tools to improve energy performance and aid decision-making, developing the business case and improving regulation.

An aerial photograph of a city skyline, likely Sydney, Australia. The image is dominated by a large, semi-transparent red circular overlay that highlights a specific area in the central business district. Within this red area, several high-rise buildings are visible, including one with a prominent 'Citigroup' logo. The rest of the city skyline is shown in grayscale, providing a stark contrast to the highlighted red area.

## 2. What do we know about the mid-tier commercial office building sector?

According to research and stakeholders interviewed, the most common definition of the mid-tier commercial building sector are those buildings that fall outside of the Property Council of Australia (PCA) premium and A-grade categories. This includes B, C, and D-grade assets, as defined by the PCA Guide to Office Building Quality. Whilst a voluntary tool, the Guide is widely recognised by the property sector as the most appropriate method of rating the 'quality' of commercial office buildings.

Mid-tier buildings are found in the capital city CBDs and fringe areas, suburban centres and some regional towns. In the CBD, they are often known for being located in 'corridor' areas – parts of the city that are considered 'secondary' zones to the main thoroughfare. They are often in the older parts of a CBD with many being some of the first high-rise offices built. In Sydney for example, this would include Chinatown, and the 'western corridor' – Clarence and York Streets.

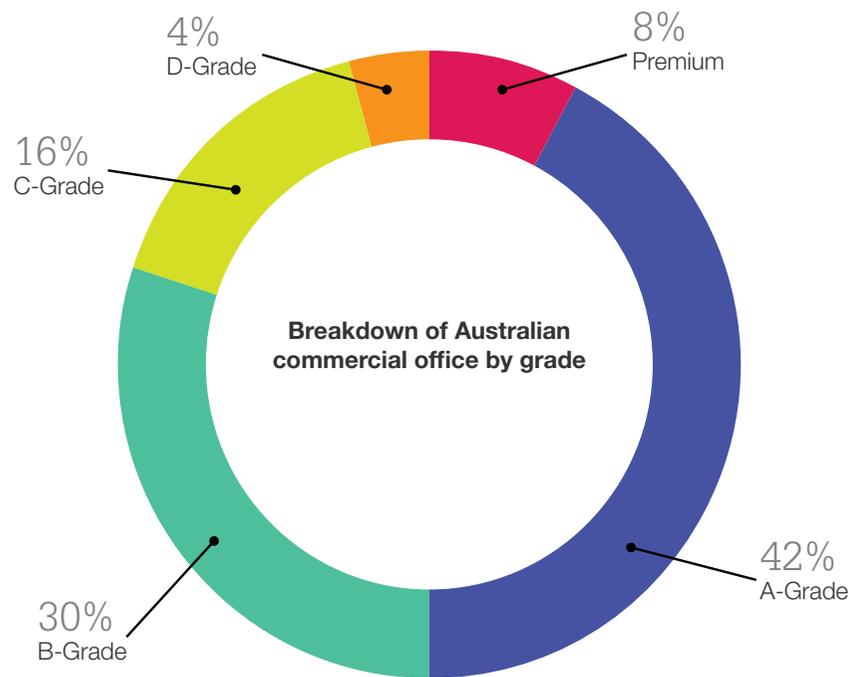
The PCA's Office Market Report includes approximately 4,500 buildings (totalling nearly 25 million square metres of NLA) located in the 8 capital cities and 17 major towns across the country. Of this, about half, or 12.3 million square metres is mid-tier B, C and D-grade stock. However we know that there is additional, mostly mid-tier office stock located in many other suburban and regional towns, not included in these figures. In addition, the PCA's Office Market Report does not capture buildings if they are sub-1000 square metres in the CBD's, and sub-500 square metres in the 17 major towns.

According to the 2015 PCA Office Market Report, the commercial office stock captured has an average age of around 27 years, with more than 80% being over 10 years old<sup>6</sup>. Investment to upgrade these buildings to lower their energy consumption and improve their sustainability would yield significant energy productivity gains and financial benefit.

Data from the 2014 NLA forward estimation from the 2012 COAG report, Baseline Energy Consumption and Greenhouse Gas Emissions in Commercial Buildings in Australia, shows that there is approximately 64 million square metres of commercial office NLA around the country<sup>7</sup>. This is an additional 2.5 times the amount of floor space captured in the PCA Office Market Report. If we assume that the top-tier buildings are all captured in the PCA Office market report (12.7 million square metres), this means that out of this 64 million square metres, nearly 52 million square metres could be classified as mid-tier. With much of this stock never having undergone energy efficiency upgrades or retrofits, and having original HVAC and, in some cases, lighting systems, this sector has vast potential for improved energy efficiency and greenhouse gas emissions reduction.

Useful data for the state of Victoria has been captured in the 2013 Davis Langdon report, The Next Wave: Retrofitting Victoria’s office buildings, which was commissioned by Sustainability Victoria<sup>8</sup>. The report found that there were an estimated 20,000 mid-tier buildings located outside of the City of Melbourne. This includes very small office buildings under 500 square metres located in many suburban and regional towns. If we extrapolate these findings, we could estimate that there could be up to 80,000 mid-tier buildings across the country. Despite their smaller size, their number means that finding the right mix of attractive energy efficiency opportunities would collectively have a significant impact on total emissions in this sector.

Mid-tier buildings are generally more energy intensive due to a combination of age, ownership profile, passive management, tenant expectations and the fact they have less chance of being impacted by CBD legislation. They often have original HVAC plant and older style lighting. The City of Sydney has found that mid-tier buildings that have completed a NABERS Energy rating have an average rating of 2.4 stars, compared to an average of 3.5 stars from the larger institutionally-owned buildings. This data would be skewed by the fact that this set of buildings was taken from a large capital city. Buildings outside of this area would potentially have an even lower level of energy efficiency.



**Figure 1:** Breakdown of Australian commercial office by PCA grade, 2015  
PCA Office Market Report

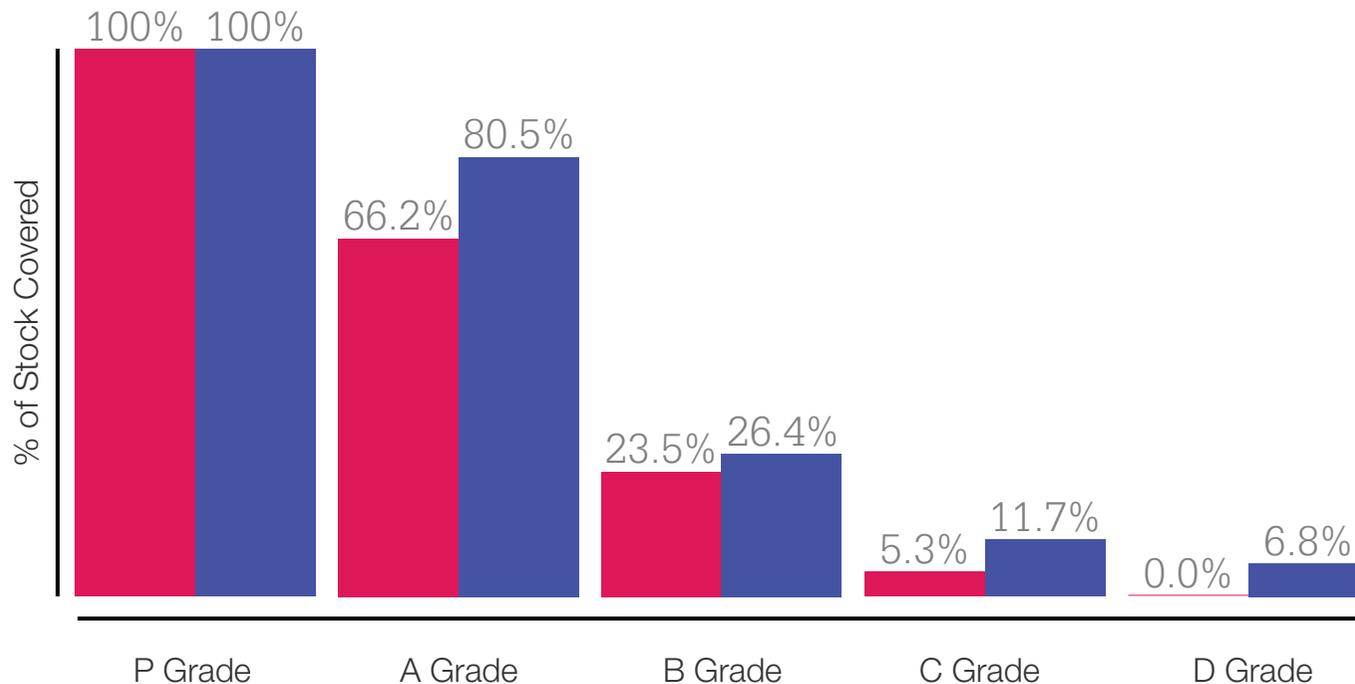
Over in Western Australia, Y Research looked at buildings within the Perth metropolitan region. All of the premium grade buildings in 2014 had NABERS ratings, with A-grade rated buildings at just over 80% (some of this missing 20% may be due to the NABERS rating having lapsed). The figure drops dramatically with only 26.4% of B-grade properties having a rating, 11.7% of C-grade properties and 6.8% of D-grade properties have a NABERS rating<sup>9</sup>. It might be a reasonable estimation to conclude that the rest of the Australian market is of a similar scale, perhaps a little higher on the East coast. The 2012 Baseline Energy Consumption and Greenhouse Gas Emissions in Commercial Buildings in Australia report shows that smaller sized office buildings

(which show a correlation to PCA grade) have a higher likelihood of being more energy intensive than the larger assets (2,000 square metres and above).

As a large consumer of electricity and producer of greenhouse gas emissions, the commercial building sector is well-positioned to contribute significantly to energy savings from efficiency upgrades, with commercial office buildings representing the largest opportunity at 3.8 million tonnes of CO<sub>2</sub>-equivalent<sup>10</sup> or 5,142 GWh by 2020. Whilst these figures aren't calculated for the mid-tier sector alone, it gives an indication of the savings that could be achieved overall.

The national potential for change in the mid-tier sector could also be ascertained by the use of the CSIRO diffusion model<sup>11</sup> which is a tool designed to model the impact of an energy efficiency program (such as the Green Building Fund or CBD program) on commercial office buildings.

**Proportion of Stock with NABERS Ratings**

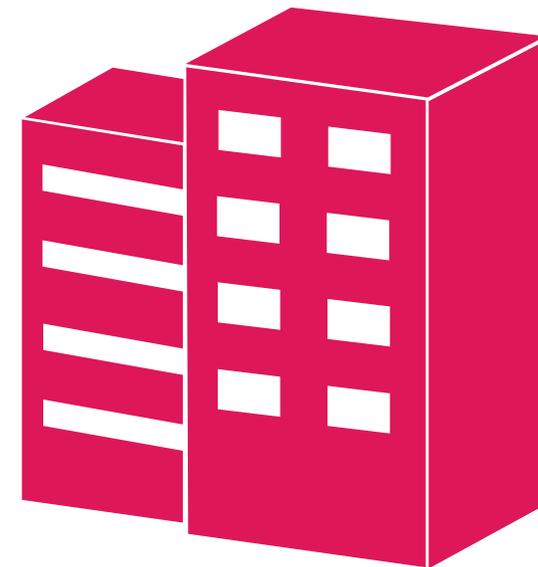


**Figure 2:** Proportion of WA NABERS ratings by PCA grade, Y Research, 2014

Mid-tier office buildings generally have the following characteristics:

- Smaller buildings, generally under 10,000 square metres
- A diverse ownership profile (secondary mid-tier, private, family-owned, strata titled, government, foreign)
- A lower level of energy efficiency than premium or A-Grade buildings
- Generally older, built before 2000
- Older HVAC plant and lighting. HVAC is likely to be the original system (25+ years old) with zero or minimal controls and lighting tends to be T8 magnetic ballast fluorescent tubes
- Where there is HVAC, it is often either a mix of central plant or individual package/split system units
- Some have natural ventilation (operable windows) so the base building can be energy efficient by default
- A small proportion have NABERS ratings, mostly triggered by Commercial Building Disclosure
- Typically higher vacancy rates than premium and A-grade assets
- A mixture of smaller offices, with mainly small and medium enterprise (SME) tenants
- Shorter lease terms than premium and A-grade assets
- Less rent per square metre
- Generally no on-site dedicated team for property/facilities management
- Other terms commonly used to describe this class of buildings includes 'secondary' or 'sub-prime'.

It should be noted that there are significant gaps in the knowledge around the number and location of mid-tier assets as well as the condition and type of HVAC and building management systems in place. This project has highlighted this as an area where further work and analysis would be beneficial in order to estimate energy efficiency improvement potential from this sector as a whole and inform the development of tailored policies and programs.



## 2.a Owners

The ownership profile of mid-tier office buildings is extremely diverse, with a wide range of investment strategies, portfolio size, and awareness of energy efficiency. Some of the larger owners manage a portfolio of buildings whilst some of the family-owned investments have a single building, which may not necessarily be part of their core business. This confirms how disparate a group mid-tier commercial building owners can be and that the business case for energy efficiency upgrades and retrofits is highly dependent on the circumstances of different building owners as well as tenants. A multi-faceted approach is critical, as well as employing a variety of communication channels, styles, incentives and programs to engage with these diverse stakeholders.

At a broad level, owners of mid-tier buildings can be classified into two distinct categories – corporate and non-corporates, with non-corporates broken down into 5 sub-categories.



**Corporate:** Mostly second tier asset management organisations, many of which target a mix of institutional and non-institutional investors. They have much smaller market capitalisation than the top-tier A-REITS and institutional investors. These groups often own a mix of larger premium and A-grade properties as well as smaller B and C-grade properties – usually earmarked for upgrade or redevelopment. They tend to be more engaged around sustainability and energy efficiency and have a longer-term outlook than other building owners in this sector. They will sometimes have a dedicated sustainability person or team and consider sustainability an important part of their overall brand. They are more likely to understand the link between the sustainability of the building and future income as well as brand and reputation. E.g. Abacus, Cromwell, Arena, Fortius, Cbus Property. Some are listed on the ASX. (Note: some of the larger A-REITS also own a number of mid-tier buildings e.g. Stockland, Charter Hall, Mirvac).



### Non-corporate - Wealthy private investors or property syndicates:

They may own a portfolio of assets across a number of different property classifications (e.g. office, retail, industrial, residential). They can be similar to the second-tier corporates, but have a much lower profile. The focus here is on yield and rental return rather than long term investment in energy efficiency. They tend to own smaller buildings, often less than 5,000 square metres. There is generally no full-time, dedicated sustainability person. Examples include Fawkner Property, Altis, and The Juilliard Group.



### Non-corporate - Second and third generation family members:

They may have inherited the asset and often have no formal organisational structure or brand. They are more likely to own only a handful of properties and these are usually not their core business. The building (or buildings) may have been purchased many years ago so has a low cost base. The owner can take on obsolescence risk and still make money. NABERS Energy ratings are only undertaken when required by the CBD program. Upgrades are usually only triggered through equipment failure or high risk of vacancy. As above, the focus here is on yield and rental return rather than long-term investment in energy efficiency. They are less likely to sacrifice income for future cash flow.



**Non-corporate - Foreign owners:** Communication is via a locally-based property manager. Upgrades are usually only triggered through equipment failure or high risk of vacancy. NABERS Energy ratings are only undertaken when required by the CBD program. Property management fees are often very constrained, giving the property manager only limited time to spend on the building doing the bare minimum.



### Non-corporate - Owners Corporations (Strata-titled properties):

Generally smaller, individually-owned tenancies. Energy efficiency upgrades are dependent on how much money they have in their sinking fund, however due to the diverse ownership profile, getting consensus on how to spend the money can be difficult.



### Non-corporate - Government or government-related organisations:

These organisations own at least 20% of mid-tier stock in each state. Other owners of mid-tier property include professional industry organisations, universities and other educational bodies, and not-for-profits including charities and religious organisations.

## 2. b Tenants

Tenants of mid-tier commercial office buildings are predominantly small to medium-sized organisations, often with no corporate sustainability agenda and limited knowledge of energy efficiency. Tenancy NLA can be as small as 20 square metres and as large as a few thousand square metres, sometimes occupying a whole building. The cost of rent per square metre is usually the primary concern for tenants when leasing a new space, and being located close to their client base, or close to transport, comes a close second. Base-building outgoings and operational energy costs are often not considered.

Mid-tier tenants are often time-poor. There might be one person wearing a multitude of hats – sustainability, workplace health and safety (WHS), office administration, accounts payable, procurement etc. They may be interested in energy efficiency – but only if it does not cost money or take much time or risk to implement.

Mid-tier tenants frequently have relatively short lease terms. Sometimes it is unclear how long the business may be viable or wish to stay in one particular location so longer-term leases are often not appropriate. Short leases and uncertainty can also impact on their motivation to seek or implement energy efficiency measures. Small organisations often lack the upfront capital to implement energy efficiency upgrades, such as lighting or equipment upgrades, in their own tenancy. However, they might implement some of the zero cost 'operational' improvements, such as turning off the lights and computers at the end of each day. This is often driven by a message from the top down to reduce energy bills, despite the fact that the lighting in their fitout may be terribly outdated with no zoning or controls. Many tenants just consider outgoings for electricity to be simply 'part of the deal' and often do not consider speaking with the building owner about ideas to improve base building efficiency to drive costs down.

Many tenants fail to compare cheap rent with the potentially high energy outgoings they will need to cover over the term of their lease. They may complain after they have signed the lease, but by then it can be too late to do anything (such as negotiate a jointly-funded lighting upgrade, or seek an office with better energy efficiency).



Some tenants do not know what they could be paying in a more efficient building and so are unable to make an informed comparison between tenancies. Facility managers may lack awareness about energy efficiency and are often responsible for multiple assets so there is not much on-site guidance to support the tenants.

A lack of tenant awareness, both regarding the benefits of and opportunities for greater energy efficiency, and improved indoor environment quality, is contributing to the slow uptake of building upgrades in the mid-tier. If tenants are not demanding better quality services, healthier buildings and cheaper outgoings, building owners are not motivated to implement improvements.

## 2.c Key stakeholders and what is in it for them

Identifying the key stakeholders and their value propositions is critical if we want to successfully influence and enact positive change with this group. There are a number of stakeholders beyond the building owners and tenants that have an important role to play in improving the energy efficiency and sustainability of the mid-tier commercial office building sector.

### Building owner

- Better return on investment (ROI)
- Future-proof the asset
- Operational cost savings
- Improved tenant retention/satisfaction

### Building tenants

- Reduced outgoings, saving money
- Keep staff/attract good people
- Improved health and comfort benefits, enhanced staff productivity and reduced absenteeism leading to enhanced business outcomes
- Attract/impress customers
- Less interruptions to business from failing building/tenancy space

### Building service providers – facility managers, contractors

- Skills in this area can be a point of difference leading to more business
- Satisfied clients
- Enhanced brand and reputation – known as trusted professionals/advisors in this area
- Reduced WHS risk if managing more efficient and well-run buildings

### Trusted Advisors – Lawyers, Accountants, Consultants, Valuers

- Build reputation
- Skills in this area can be a point of difference leading to more business
- Satisfied clients

### Government and NGOs

- Carbon emissions reduction
- Improved energy efficiency
- Increased uptake of NABERS ratings
- Enhanced occupant wellbeing
- Productivity improvements
- Economic growth
- Resilience

### Investors/Finance institutions

- Improved asset value and reduced risk
- Bigger market – more building owners considering loans for capital investment
- Expertise and tailored solutions in this area can be a point of difference leading to more business

### Leasing and Property Management professionals

- Build reputation
- Expertise and tailored solutions in this area can be a point of difference leading to more business
- Easier to lease/manage a high performing building
- Satisfied clients and greater tenant retention

### 3. Issues and barriers

There are many reasons why the mid-tier commercial office building sector has been historically difficult to engage with regarding energy efficiency. Energy efficiency and environmental sustainability is often perceived as a low priority by building owners as well as other key stakeholders. From the research and workshop conducted for this project, it is clear that any future actions and communication should focus on the business case and value propositions for each stakeholder group, rather than relying on promoting improved energy efficiency or emissions reduction as the primary objective.

Many mid-tier building owners are reluctant to invest in capital improvements because of barriers to accessing capital, a lack of awareness regarding energy efficiency and the benefits, or the perception that investing energy in efficiency does not yield a worthwhile return.

Often, building upgrades in the mid-tier commercial office building sector are triggered by equipment failure or continued vacancies. Many mid-tier owners are inclined to avoid capital expenditure for as long as possible. However, failing to keep adequate conditions inside the building puts the owner at risk of breach of lease requirements and putting tenants offside. Considering that an HVAC upgrade can take many months to procure, install and commission, delaying capital expenditure can be risky, but is still common.

Once a decision has been made to retrofit, many owners ask for a 'like for like' replacement of equipment, often because of a lack of knowledge about the opportunities and benefits of improved energy efficiency, or a perceived notion that energy efficiency is expensive. Current HVAC technology in the market is generally efficient, especially when comparing current efficiency to that of a 25+ year old system. To achieve an optimal outcome, the final solution also needs to include proper controls and commissioning, and a detailed assessment upfront to ensure that the equipment is appropriately sized for the building load. This is one extremely important part of the process which does not always occur and suggests that contractor and facility management education in this space needs to be improved.



Performing energy efficiency upgrades and retrofitting existing buildings can be difficult due to the fact that they generally require the cooperation of a wide range of stakeholders such as tenants, landlords, property managers, local council and contractors. Unlike the top institutional investors and A-REITs, branding and reputational risk are not always as important for mid-tier sector owners.

Reporting on energy efficiency performance is not required, or seen as necessary for many buildings in this sector. The PCA Guide to Office Building Quality includes NABERS ratings as part of the overall assessment criteria. Premium and A-grade stock are required to have 4 star and 3.5 star NABERS Energy ratings respectively, B-grade buildings are only required to have a rating (with any number of stars), whilst C and D-grade buildings are not required to have undertaken a rating at all. The CBD program currently only applies to buildings and tenancies over 2000 square metres.

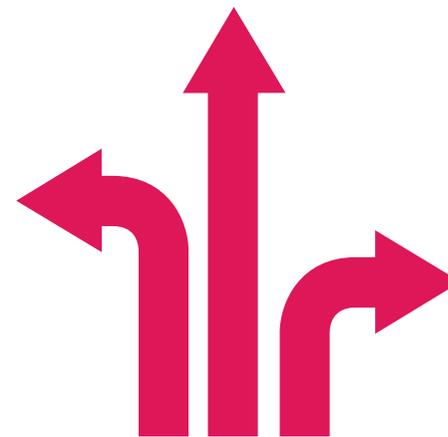
Learnings from a range of initiatives aimed at improving energy efficiency suggest that there is no single solution that will solve the dilemma of improving energy productivity in the mid-tier sector. Because of the disparate nature of building owners and property types, each with their own set of drivers and strategies, solutions to improve the uptake of existing commercial building retrofits in the mid-tier commercial office building sector will need a multifaceted approach.

Whilst some of the drivers for improving large commercial buildings, or incentives for large corporate building owners will be of interest to the mid-tier commercial office buildings sector, consideration must be given to new initiatives specifically tailored to the mid-tier sector.

In addition, it is recognised that there is still much that is not known about this sector. For instance, the total NLA, where the buildings are located, how old they are, who their owners are, what level of energy efficiency they have, or how much energy efficiency potential exists overall. Further research and analysis will help to create a more complete picture and enable the design of the most appropriate solutions.

#### **Barriers to improvements in this sector include:**

- Many mid-tier building owners can be reluctant to invest in capital improvements because of barriers to accessing capital, a lack of awareness regarding energy efficiency and the benefits, or the perception that investing energy efficiency does not yield a worthwhile return
- Building owners and tenants often do not have access to all the information they need to make a fully-informed decision about buying a building, leasing a space, or choosing a service provider
- Mid-tier building owners do not typically network amongst themselves (unlike premium or A-grade building owners) and they are under-represented on industry bodies like the PCA
- Split incentives between tenants and building owners mean that building owners are reluctant to invest in upgrades if tenants will reap the benefits
- A lack of tenant demand for better quality buildings/tenancies, through lack of awareness or lack of corporate policies driving environmental or social policies.
- The number of tenants in an office building can have a major impact on the retrofitting decision making process due to the risk of disruption to existing tenants while upgrades are being implemented and the number of stakeholders that must be consulted and provide approval
- Lack of appropriate skills and expertise amongst industry service providers and other stakeholders to advocate for and drive the uptake of upgrades
- Government is not driving energy efficiency outcomes strongly enough to impact the mid-tier buildings sector
- Most stakeholders in the mid-tier commercial office building sector are time-poor and do not prioritise energy efficiency in the range of competing demands on their time and resources.



## 4. Pathway

Based on the key outcomes of the research and engagement undertaken for this project, a pathway highlighting key outcomes and actions in the short, medium and longer term have been developed. This pathway can be used by governments and industry to guide the development of policies and programs with the aim of the mid-tier commercial office building sector to become 'an exemplar for energy efficiency and greenhouse gas emissions reduction'.

## 4.a Outcomes – What do we want to achieve?

A number of outcomes were identified through the research and the workshop as worthwhile objectives in their own right, as well as indicators of success that could be used to check progress against the overall goal. These are outlined below:

1

There is a massive positive shift in building owners' awareness and behaviours and all stakeholders will value more efficient, healthy, sustainable buildings. This will be demonstrated and measured by increased demand for higher-performing buildings and a decreased demand for poor-performing buildings, and may be reflected by uptake of energy efficiency upgrades and retrofits, increases demand for service providers with relevant expertise, changes in vacancy rates, 'green premiums' for higher-performing buildings and/or 'brown discounts' for poor-performing buildings.

2

Significant reduction in total energy consumption and greenhouse gas emissions.



4

There is a compelling and quantified business case for undertaking energy efficiency/ building upgrades.

6

Replaced equipment will all be of higher standard and more efficient than that which it is replacing.



3

A robust and trusted evidence base that includes data on the number, size, grade, location, energy performance, equipment condition, ownership and tenants of mid-tier commercial office buildings in Australia.

5

Improved standards for buildings and equipment and increased transparency for tenants and prospective tenants of building performance (energy, water, indoor environment quality etc.).

7

End-to-end service innovation and a growing number of industry service providers with the relevant skills and experience to encourage better energy efficiency outcomes using them. Ultimately all leases should be 'green' or at least contain clauses that promote improved building performance for energy and other metrics.

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8

Self-sustaining capital investment.

11

Tenants have improved understanding of building attributes that impact occupant productivity as well as how to measure and value improvements to productivity.

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9

Integrated tools that meet the needs of a range of stakeholders for awareness-raising, decision-making, measuring and reporting.

12

Happy people in healthy buildings



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10

A national representative body for mid-tier sector and a central and trusted source of information and resources.



## 4.b Possible actions to achieve the outcomes

A list of actions has been compiled to work towards the outcomes outlined above. These actions have been grouped under six higher level strategies and categorised according to their timeframe (short, medium and long). The proposed list of actions does not intend to be exhaustive, but rather reflects input from various stakeholders involved in this project.

Item	Action	Activity could be commenced in short, medium or the long term	Actions contribute to the following outcomes
<p>1. Develop a robust and trusted evidence base</p>	<ul style="list-style-type: none"> <li>• Conduct further research into the number, size, grade, location, energy performance and equipment condition of mid-tier commercial buildings in Australia.</li> <li>• Conduct further research into the ownership structure, management approach and tenant profile of mid-tier commercial office buildings in Australia.</li> <li>• Compile a national knowledge scoping study and tools gap analysis: The Building Retrofit Toolkit (BRT) Scoping Study will establish best practice in retrofits and tune-ups in mid-tier buildings and identify any need for refinement in existing information and tools or gaps requiring new materials (partnership projects of Energy Efficiency Council and Property Council of Australia).</li> <li>• Investigate the potential benefits of successful policies, programs and initiatives that could be applied to or adapted for mid-tier commercial buildings.</li> <li>• Draw on modelling tools to analyse ‘the impact and likely outcomes of potential energy productivity initiatives. E.g. CSIRO diffusion model</li> <li>• Conduct further research into the link between efficient buildings with good indoor environment quality and tenant wellbeing and productivity.</li> </ul>		

Item	Action	Activity could be commenced in short, medium or the long term	Actions contribute to the following outcomes
2. Build a compelling and quantified business case for energy efficiency upgrades	<ul style="list-style-type: none"> <li>Develop and compile case studies and data sets: A number of case studies for mid-tier buildings already exist, but more are needed to support targeted communication to owners and tenants. Better data would also help identify cost effective opportunities and value of assets.</li> <li>Develop information about building life-cycle costs in relation to energy efficiency upgrades.</li> </ul>	 	 
3. Create a shift in awareness, knowledge and behaviour	<ul style="list-style-type: none"> <li>Mid-tier definitions and phrasebook: Develop a phrasebook about mid-tier buildings that promotes common definitions, and enables stakeholders to speak the same language.</li> <li>Building on the outcomes of the BRT Scoping Study, develop a tailored, comprehensive package of interventions that includes tools, information and facilitation to support mid-tier office building owners achieve best practice energy performance and promote it through trusted sources.</li> <li>Consider disclosure options for smaller office buildings (currently not covered by the Commercial Buildings Disclosure program): This could be achieved through lowering the current CBD program threshold of 2000m<sup>2</sup>, or a voluntary scheme.</li> <li>Educate facility managers, contractors and other mid-tier service providers about energy efficiency and technologies so that they can implement maintenance or upgrade actions effectively, understand green leases and memoranda of understanding (MOUs), and can proactively influence owners.</li> <li>Maximise opportunities to engage with and provide relevant information to owners and stakeholders at critical decision making points in a building lifecycle such as lease expiry, equipment lifecycle, changes to regulation and legislation.</li> </ul>	    	   

Item	Action	Activity could be commenced in short, medium or the long term	Actions contribute to the following outcomes
<p>4. Develop and identify tools to promote improved energy performance</p>	<ul style="list-style-type: none"> <li>• Develop a user review app for buildings that will allow people to rate and compare the buildings in which they work against metrics such as comfort, natural light, fresh air etc.</li> <li>• Raise awareness and promote the use of existing tools such as NABERS, Green Star, Calculating Cool, LEASA App.</li> <li>• Develop a best-practice MOU template that gives owners and tenants more confidence to work together to achieve better outcomes for their building. The Better Buildings Partnership is developing an exemplar MOU that could be promoted widely.</li> <li>• Promote existing green leasing resources to mid-tier stakeholders.</li> <li>• Include information about indoor environment and improved employee productivity as part of Work Health and Safety (WHS) considerations.</li> </ul>		<p>5</p> <p>7</p> <p>9</p> <p>11</p>
<p>5. Establish representative bodies and networks</p>	<ul style="list-style-type: none"> <li>• Work with existing industry bodies to target the mid-tier sector and if necessary, establish a national representative body as a central and trusted source of information and resources.</li> <li>• Establish a sector network or forum to bring together key stakeholders to increase collaboration, innovation and exchange.</li> </ul>		<p>10</p>

Item	Action	Activity could be commenced in short, medium or the long term	Actions contribute to the following outcomes
5. Establish representative bodies and networks	<ul style="list-style-type: none"> <li>Establish a Regulatory Working Group for identifying regulatory changes required (e.g. Minimum Energy Performance Standards for appliances and equipment, building standards and CBD program).</li> <li>Collaborate with local councils, industry bodies and training providers to develop and deliver useful, nationally-consistent information.</li> </ul>	 	
6. Promote innovative financing mechanisms	<ul style="list-style-type: none"> <li>Promote a range of financing mechanisms to encourage upgrades/ retrofits. E.g. accelerated depreciation, rebates, low interest loans and Environmental Upgrade Agreements.</li> <li>Develop support mechanisms and approaches (e.g. deeming methods for HVAC and lighting) to assist mid-tier buildings to access funding programs such as the Emissions Reduction Fund or state-based white certificate schemes.</li> </ul>	 	 

## 5. Appendix

### 5.a Workshop participants

Alex Harrington	Warren Centre
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Cameron Forbes	JLL
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Dale O'Toole	Savills
Eli Court	ClimateWorks
Esther Bailey	City of Sydney
Evalin Ling	AG Coombs
Geoff Gourley	NuGreen Solutions
Gopinath Rao	Team Catalyst
Helen Bennett	Department of Industry
Jamie Wallis	Sustainability Victoria
Jason Veale	AECOM
John Gardner	CSIRO
John Thwaites	ClimateWorks

John Casey	Facility Management Association of Australia	Sara Wilkinson	University of Technology, Sydney
Katy Dean	Green Building Council of Australia	Scott Bocskay	Sustainable Melbourne Fund
Kimberley Slow	MSCI Real Estate - IPD	Shane Quinn	Quintessential Property
Lane Burt	ClimateWorks	Shauna Coffey	Energy Efficiency Council
Michael Dodd	Sustainability Victoria	Simon Carter	Morphosis
Michele Leembruggen	City of Melbourne	Stefan Preuss	Sustainability Victoria
Michelle Isles	City of Melbourne	Tim Wong	NSW Office of Environment and Heritage
Neil Savery	Australian Building Codes Board	Tom Belsham	City of Sydney
Paul Bannister	Energy Action	Vicky Grosser	City of Greater Geelong
PC Thomas	Team Catalyst	Yarden Ityel	Impact Investment Group
Peter Sherlock	Sherlock FMC		
Phil Wilkinson	Australian Institute of Refrigeration, Airconditioning and Heating		
Richard Day	SA Government – Department of State Development		
Robert White	NAB		
Robin Mellon	Green Building Council of Australia		
Rod Woolley	Essential Services Commission		
Roger Walker	Lend Lease		
Romilly Madew	Green Building Council of Australia		
Russell Evans	AECOM		
Samantha Hall	City of Perth		
Sandra Qian	Property Council of Australia		

## 5.b Further resources

### **1200 Buildings**

[www.melbourne.vic.gov.au/1200buildings](http://www.melbourne.vic.gov.au/1200buildings)

### **Better Buildings Partnership**

[www.sydneybetterbuildings.com.au](http://www.sydneybetterbuildings.com.au)

### **Calculating Cool**

[www.calculatingcool.com.au](http://www.calculatingcool.com.au)

### **CitySwitch**

[www.cityswitch.net.au](http://www.cityswitch.net.au)

### **Commercial Building Disclosure program**

[www.cbd.gov.au](http://www.cbd.gov.au)

### **Emission Reduction Fund**

[www.environment.gov.au/climate-change/emissions-reduction-fund](http://www.environment.gov.au/climate-change/emissions-reduction-fund)

### **Environmental Upgrade Agreements**

[www.environment.nsw.gov.au/business/upgrade-agreements.htm](http://www.environment.nsw.gov.au/business/upgrade-agreements.htm)

### **Green Star**

[www.gbca.org.au/greenstar/](http://www.gbca.org.au/greenstar/)

### **Leasa app**

[www.rics.org/au/](http://www.rics.org/au/)

### **NABERS Energy**

[www.nabers.gov.au](http://www.nabers.gov.au)

## 5.c References

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2. ASBEC The Second Plank Report: Building a Low Carbon Economy with Energy Efficiency Buildings, 2008
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11. McGregor, James: RP3002 - A Framework for Government Low Carbon Living Policy & Program Development – Diffusion model, 2013

## 5.d Sponsors and Supporters

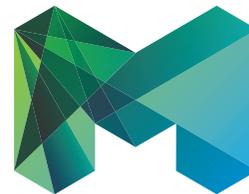
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**Department of Industry,  
Innovation and Science**



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