

6 August 2018

At the conclusion of the Corporate, Finance, Properties
and Tenders Committee



Environment Committee

Sydney 2030 Green/Global/Connected

Agenda

- 1. Disclosures of Interest**
- 2. Adoption - Sector Sustainability Plans**
- 3. Membership - Cooperative Research Centre for Water Sensitive Cities**
- 4. Accelerated Replacement of Street Lights**

Guidelines for Speakers at Council Committees



As part of our democratic process, the City invites members of the community to speak directly to Councillors during Committee meetings about items on the agenda.

To enable the Committee to hear a wide range of views and concerns within the limited time available, we encourage people interested in speaking at Committee to:

1. Register to speak by calling Council's Secretariat on 9265 9310 before 12.00 noon on the day of the meeting.
2. Check the recommendation in the Committee report before speaking, as it may address your concerns so that you just need to indicate your support for the recommendation.
3. Note that there is a three minute time limit for each speaker (with a warning bell at two minutes) and prepare your presentation to cover your major points within that time
4. Avoid repeating what previous speakers have said and focus on issues and information that the Committee may not already know.
5. If there is a large number of people interested in the same item as you, try to nominate three representatives to speak on your behalf and to indicate how many people they are representing.
6. Before speaking, turn on the microphone by pressing the button next to it and speak clearly so that everyone in the Council Chamber can hear.
7. Be prepared to quickly return to the microphone and respond briefly to any questions from Councillors, after all speakers on an item have made their presentations.

Committee meetings can continue until very late, particularly when there is a long agenda and a large number of speakers. This impacts on speakers who have to wait until very late, as well as Council staff and Councillors who are required to remain focused and alert until very late. At the start of each Committee meeting, the Committee Chair may reorder agenda items so that those items with speakers can be dealt with first.

Committee reports are on line at www.cityofsydney.nsw.gov.au, with printed copies available at Sydney Town Hall immediately prior to the meeting. Council staff are also available prior to the meeting to assist.

Item 1.

Disclosures of Interest

Pursuant to the provisions of section 451 of the Local Government Act 1993, Councillors are required to disclose pecuniary interests in any matter on the agenda for this meeting of the Environment Committee.

Councillors are also required to disclose any non-pecuniary interests in any matter on the agenda for this meeting of the Environment Committee in accordance with the relevant clauses of the Code of Conduct – February 2016.

In both cases, the nature of the interest must be disclosed.

Written disclosures of interest received by the Chief Executive Officer in relation to items for consideration at this meeting will be laid on the table.

Item 2.

Adoption - Sector Sustainability Plans

File No: S123730

Summary

This report recommends that the final versions of two Sector Sustainability Plans (the Plans): Making Sydney a Sustainable Destination and Sydney's Sustainable Office Building Plan, be adopted by Council.

On 19 February 2018, Council approved placing the draft plans on public exhibition, which then occurred from 20 February 2018 to 17 April 2018. Key stakeholders were consulted as part of the public exhibition process, via briefings, emails and promotion of the plans in industry publications. In response to the public exhibition, the City received 18 submissions, which are summarised in Attachment A.

Strong support for both plans was a common theme of the submissions received. Where appropriate, the plans have been amended in response to the issues raised, as outlined in Attachment A. The final plans are included at Attachments B and C.

The Plans take a customer perspective with the aim to increase uptake of environmental action by key stakeholders within the sectors – building developers, owners, tenants, industry groups and government departments. The plans outline actions for industry to take, and also identify a range of actions that the City will take to support the sector. The Plans are a platform for collaboration with industry sectors and other levels of government to catalyse action to achieve the environmental targets set for the local government area in Sustainable Sydney 2030 and Environmental Action 2016 - 2021.

Making Sydney a Sustainable Destination targets energy use, carbon emissions, water use and waste generation within accommodation and entertainment buildings – hotels, backpackers, serviced apartments, major entertainment venues, theatres and pubs and clubs. Through delivery of the industry and City actions in this plan, sector emissions could reduce by 47 per cent by 2021/22 (from 2006 levels); and by 61 per cent by 2029/30 (from 2006 levels). The actions in this plan can also enable the sector to deliver zero increase in potable water use from 2006 baseline by 2021/22; and a nine per cent reduction by 2029/20, achieved through water efficiency and recycled water. It also identifies an increase in resource recovery to divert 70 per cent of waste from landfill by 2021/22, and up to 90% by 2029/30.

Sydney's Sustainable *Office Building* Plan outlines the challenges and opportunities for office buildings, acknowledging different ownership groups for their leadership (institutional owners in the Better Buildings Partnership) and challenges (low engagement and capacity of private individual owners). Through delivery of the industry and City actions in this plan, sector emissions could reduce by 26 per cent by 2021/22 (from 2006 levels), and by 46 per cent by 2029/30 (from 2006 levels). The actions in this plan can also enable the sector to deliver zero increase in potable water use from 2006 baseline by 2021/22, and a nine per cent reduction by 2029/30, achieved through water efficiency and recycled water. It also identifies an increase in resource recovery to divert 70 per cent of waste from landfill by 2021/22, and up to 90 per cent by 2029/30.

These plans have been developed following the City of Sydney's adoption of the first Sector Sustainability Plan, the Residential Apartments Sustainability Plan in August 2015, which addresses the challenges of environmental performance in apartment buildings.

Comprehensive industry stakeholder engagement was undertaken during the development of both plans. Over 40 organisations from the accommodation and entertainment (and events) industry were directly engaged, 83 responded to the phone survey and 16 to the online survey, making a total sample size of 139. Over 40 office stakeholders attended tailored briefings for owners, managers and tenants.

In addition, an external stakeholder Reference Group consisting of key government agencies with a specific interest in environment and planning of the built environment, organisations representing key stakeholders and special interest groups, and energy and water distribution networks, provided advice during the development of the plans.

Recommendation

It is resolved that:

- (A) Council note the Consultation Report from public exhibition of the draft Plans, as shown at Attachment A to the subject report;
- (B) subject to clause (C) below, Council adopt the Making Sydney a Sustainable Destination Plan and Sydney's Sustainable Office Plan, as shown at Attachments B and C to the subject report; and
- (C) authority be delegated to the Chief Executive Officer to correct any minor editorial errors to the Making Sydney a Sustainable Destination Plan and Sydney's Sustainable Office Plan, as shown at Attachments B and C to the subject report.

Attachments

- Attachment A.** Sector Sustainability Plans Public Exhibition Consultation Report
- Attachment B.** Making Sydney a Sustainable Destination
- Attachment C.** Sydney's Sustainable Office Plan

Background

1. The City of Sydney's Sustainable Sydney 2030 vision includes science-based environmental targets including a 70 per cent emissions reduction for the local government area (from a 2006 baseline).
2. Environmental Action 2016 - 2021 (the Action Plan) renewed the City's Sustainable Sydney 2030 environmental targets in line with the Paris agreement, increasing the City's renewable energy target to 50 per cent by 2030 and setting revised water and waste targets. Importantly, the Action Plan includes a goal for net zero emissions by 2050.
3. The Sector Sustainability Plans (the Plans) identify the most effective way for specific sectors of the city's built environment to reduce their environmental impact and contribute towards the ambitious local government area targets.
4. The Plans explore opportunities for reduction, barriers to action in business and community sectors, and stakeholder roles to foster collaboration to achieve cost effective outcomes. The Residential Apartments Sustainability Plan, adopted in 2015, piloted the model and is now being successfully implemented.
5. Sectors of the built environment were targeted because, similar to many cities, buildings are responsible for 80 per cent of the city's emissions. More specifically, the Plans seek to understand and engage those stakeholders who have decision making control or capacity to affect change in these buildings.
6. The office and accommodation and entertainment sectors were selected after a thorough prioritisation process, which considered:
 - Impact: scale of sector carbon, water and waste impact.
 - Opportunity: potential for reduction in carbon, water and waste impact.
 - Engagement: stakeholder networks and influencer channels, existing programs, partnerships and engagement with the sector.
 - Governance: concentration of ownership and management, decision making structures.
 - Capacity: (skills/experience) and capability (time/resources).
7. To date, the City has delivered successful programs targeting the engaged leaders of each sector. The City now needs to build on this to activate broad change across all parts of these sectors – not just the leaders.
8. Targeted engagement with sector-specific stakeholders was conducted to understand what drives each sector to act on environmental opportunities and to create a sense of collective ownership of the City's vision and the Plans. The aim was to motivate stakeholders to act to expedite progress and deliver reductions more quickly and efficiently than would otherwise be possible by the City alone.

9. Technical input was provided by consultants with relevant expertise, who modelled the carbon reduction potential of a suite of cost-effective and practical measures. Both plans identify significant opportunities to achieve environmental outcomes in buildings through changes to state and federal government policy. For example, increasing minimum environmental performance standards in new buildings and major refurbishments, and mandating the periodic disclosure of NABERS performance ratings.

Updates to Making Sydney a Sustainable Destination

10. The Plan has been modified slightly in response to the submissions received, to correct minor errors, incorporate more recent data, and to update the outcomes and actions, as these have been further refined during the process of establishing a monitoring and evaluation framework for the Plan. Changes to the Plan are summarised below:
 - (a) Section 1 - Executive Summary
 - (i) Updated to reflect more recent visitor data.
 - (ii) Minor corrections to anticipated carbon emissions reduction of specific measures.
 - (iii) 'City support' actions updated to align with a refined set of actions developed as the monitoring and evaluation plan has been established. No actions have been removed, however, several have been combined or reworded.
 - (iv) 'City support' action 'Update the Development Control Plan (DCP) to specify minimum waste and recycling storage requirements in buildings' has been replaced with 'Promote the use of the updated Guidelines for Waste Management in New Developments'. The DCP amendment has already been taken to Council, so it was appropriate to update the action to reflect the next step.
 - (b) Section 2 - Our Vision for Sydney as a Sustainable Destination
 - (i) Minor rewording of several outcomes stated in this section to align with the monitoring and evaluation framework for the Plan.
 - (c) Section 3 - About the Sector
 - (i) Updating of economic data about visitors to Sydney. The new figures are from 2017 and reflect the economic impact on metropolitan Sydney, not the City of Sydney as stated in the draft Plan. Data specific to the City of Sydney was not available for a recent reporting period.
 - (ii) Updating of data about the composition of the accommodation market in the City, based on the most recent Floorspace Employment Survey.

- (d) Section 6 - Opportunities
 - (i) Addition of a section outlining the opportunity for the sector to improve its environmental performance by addressing food waste; addition of a case study about the Hilton Sydney's work on food waste. This was in response to a submission received during the public exhibition period.
- (e) Section 7 - Industry Action - and Support from the City
 - (i) As per Section 1, 'City support' actions updated to align with a refined set of actions developed monitoring and evaluation framework for the Plan. No actions have been removed, however, several have been combined or reworded.
- (f) Section 8 - Plan Development and Reporting
 - (i) Addition of content relating to the City's work on development of a monitoring and evaluation plan for the Plan. This was in response to a submission received during the public exhibition period.
- (g) Appendix A - Carbon Reduction Measures, Assumptions and Actions
 - (i) As per Section 1, 'City support' actions updated to align with a refined set of actions developed as the monitoring and evaluation plan has been established. No actions have been removed, however, several have been combined or reworded.
 - (ii) Minor corrections to anticipated carbon emissions reduction of specific measures.

Updates to Sydney's Sustainable Office Building Plan

11. The Plan has been modified slightly in response to the submissions received, to correct minor errors and incorporate more recent data, and to update the outcomes and actions, as these have been further refined. Changes to the Plan are summarised below:
- (a) Section 1 - Executive Summary
 - (i) Addition of an infographic.
 - (ii) 'City support' actions updated to align with a refined set of actions developed as the monitoring and evaluation plan has been established. No actions have been removed, however, several have been combined or reworded.
 - (iii) 'City support' action 'Update the Development Control Plan (DCP) to specify minimum waste and recycling storage requirements in buildings' has been replaced with 'Promote the use of the updated Guidelines for Waste Management in New Developments'. The DCP amendment has already been taken to Council, so it was appropriate to update the action to reflect the next step.

- (b) Section 2 - Our Vision for Sydney's Sustainable Offices
 - (i) Minor rewording of several outcomes stated in this section to align with the monitoring and evaluation plan that has been established.
- (c) Section 4 - Renewable Energy
 - (i) Renewable energy supply figures updated with more recent data.
- (d) Section 7 - Industry Action - and Support from the City
 - (i) As per Section 1, 'City support' actions updated to align with a refined set of actions developed as the monitoring and evaluation plan has been established. No actions have been removed, however, several have been combined or reworded.
- (e) Section 8 - Plan Development and Reporting
 - (i) Addition of content relating to the City's work on development of a monitoring and evaluation plan for the Plan.
- (f) Appendix A - Carbon Reduction Measures, Assumptions and Actions
 - (i) As per Section 1, 'City support' actions updated to align with a refined set of actions developed as the monitoring and evaluation plan has been established. No actions have been removed, however, several have been combined or reworded.

Key Implications

Strategic Alignment - Sustainable Sydney 2030 Vision

12. Sustainable Sydney 2030 is a vision for the sustainable development of the City to 2030 and beyond. It includes 10 strategic directions to guide the future of the City, as well as 10 targets against which to measure progress. This report and attached plans are aligned with the following strategic directions and objectives:
 - (a) Direction 1 - A Globally Competitive and Innovative City - Making Sydney a Sustainable Destination will expand the City's profile as a sustainable destination showcasing the great environmental aspects of Sydney: clear air, water and the great outdoors, as well as our environmental strategies and achievements. With the International Convention Centre and an increasing amount of accommodation with high environmental performance benchmarks, the City stands to gain a greater share of the growing sustainable business events market.
 - (b) Direction 2 provides a road map for the City to become A Leading Environmental Performer - The Plans address key barriers to action in each sector and provide targeted actions to make significant contributions to the local government area emissions targets.
 - (c) Direction 4 - A City for Walking and Cycling - Both plans have specific actions to encourage active and public transport.

- (d) Direction 9 - Sustainable Development, Renewal and Design - New developments and major refurbishments afford the largest and most cost effective opportunity to secure long term sustainability in building operations in the design and construction. Both plans put forward the need for strengthening environmental performance standards in the City's planning controls in the absence of effective action at the state and federal level.

Organisational Impact

13. Internal stakeholders from relevant business units were engaged on the Project Control Group throughout the development of the plans and have agreed to resource implementation of the plans. Nine business units are contributing to the delivery of the Making Sydney a Sustainable Destination and five business units will assist with the delivery of the Sydney's Sustainable Office Building Plan.

Risks

14. At the strategy development stage, the major risk relates to whether the actions proposed in the Plans are the most effective ones and will resonate with industry stakeholders. This risk has been mitigated by undertaking a significant amount of stakeholder engagement in the development phase of the Plans. There is a high level of engagement by sector stakeholders and strong support for the City taking a lead to foster and support industry action.
15. During implementation, there is a risk that the actions proposed may not deliver the expected environmental benefits (energy, water and waste reductions). This risk will be mitigated through the development of a monitoring and evaluation plan for each sector sustainability plan, and the use of the Environmental Sustainability Platform to track environmental performance. If required, actions in the plan will be adjusted annually.

Social / Cultural / Community

16. Benefits from implementation will include energy savings, financial savings and jobs generation as well as benefits such as productivity, health and wellbeing, market share and reputational gains.

Environmental

17. As detailed above, implementation of the actions in these plans will result in significant environmental performance improvement in the local government area.

Economic

18. Achieving the emissions reductions targets identified in the Plans will have a positive economic impact. In the office sector, buildings with high environmental ratings will attract and retain quality tenants and enjoy cost savings from energy and water efficiencies. Increased environmental performance in the accommodation and entertainment sector will enable Sydney to successfully compete for major international events, whose organisers are seeking a sustainable destination. It has been estimated that the Plans combined will generate over \$200M in net economic benefits over the life of the measures.

Budget Implications

19. Costs associated with implementation of the City's actions in the Plans have been included in the 2018/19 operational budget and future year forward estimates. As implementation progresses, future financial implications necessary to maintain sector engagement and fully implement the plans may be identified. Approval from Council would be sought where required in accordance with existing financial delegation and budget approval processes.

Relevant Legislation

20. Local Government Act 1993, sections 8, 8A and 8C.

Public Consultation

21. Significant stakeholder engagement with both the office and accommodation and entertainment sectors was undertaken during the development of the Plans, and during the public exhibition period.
22. An external stakeholder Reference Group consisting of key government agencies with a specific interest in environment and planning of the built environment; organisations representing key stakeholders and special interest groups; and energy and water distribution networks provided input during the development of the Plans. The role of these key technical and policy experts was to: provide advice; build a common understanding of the issues, barriers and opportunities; advocate for the solutions and resources required; and support the delivery of action/s determined by the Plans.
23. The Reference Group included: NSW Office of Environment and Heritage; NSW Department of Planning and Environment; Urban Growth NSW; NSW Department of Trade and Investment; Transport for NSW; Green Building Council Australia; Property Council Australia; Better Buildings Partnership; Energy Efficiency Council; Facilities Management Australia; Engineering Association Australia; Sydney Water; and Jemena.
24. Targeted engagement activities were conducted to gain ideas and insights from sector stakeholders within the city and test the City's assumptions on the barriers and motivators to environmental sustainability.
25. Engagement with the accommodation and entertainment sector included face to face meetings, phone meetings, and a phone survey. In addition, a sector expert was contracted to engage with the sector to seek specific information about the ownership structures within the sector as well as the access to capital for environmental improvements. Over 40 organisations from the accommodation and entertainment (and events) industry were directly engaged, 83 responded to the phone survey and 16 to the online survey, making a total sample size of 139.

26. To better understand the differing ownership groups of the office sector the C40 City Advisor first met with the Better Buildings Partnership to understand how the City can further support their leadership. Across the board, there was support and interest for the development of the plan and an overall consensus on the next focus areas for the sector: renewable energy, tenant engagement and privately owned offices. Over 40 stakeholders attended tailored briefings for owners, managers and tenants. A further follow-up session was held to report back to stakeholders how their feedback had been incorporated into modelling and would inform the Sector Sustainability Plan.
27. Public exhibition was held from 20 February 2018 to 17 April 2018.
28. The draft Plans were exhibited on the Sydney Your Say website.
 - (a) Making Sydney a Sustainable Destination
 - (i) Total visits: 693
 - (ii) Document downloads: 233
 - (b) Sydney's Sustainable Office Plan:
 - (i) Total visits: 628
 - (ii) Document downloads: 296
29. During the public exhibition period key stakeholders from each sector were engaged through a number of targeted mechanisms:
 - (a) Email to over 700 industry stakeholders
 - (b) Industry newsletters - promotion of the Plans was included in four industry newsletters
 - (c) Briefings - City staff presented the Plans to 10 industry meetings
30. The plans received media coverage in the Fifth Estate on 6 March 2018.
31. Submissions were received from the following organisations and three individuals:
 - (a) Sydney's sustainable office plan:
 - (i) The projects
 - (ii) Built
 - (iii) AMP Capital
 - (iv) Property Council of Australia
 - (v) Green Building Council Australia (GBCA)
 - (vi) Australian Institute of Refrigeration, Air Conditioning and Heating (AIRAH)
 - (vii) National Australian Built Environment Rating System (NABERS)
 - (b) Making Sydney a Sustainable Destination:

- (i) National Australian Built Environment Rating System (NABERS)
 - (ii) The Animal, Tree and Homeless Campaign
 - (iii) Tourism Accommodation Australia (NSW)
 - (iv) Green Building Council Australia (GBCA)
 - (v) Supply Chain Sustainability School
 - (vi) Pacific Asia Travel Association (PATA)
 - (vii) Griffith Institute for Tourism, Griffith University
 - (viii) The Business Travel Consulting Group (BTCG)
 - (ix) World Wildlife Fund
32. Submissions and other engagement activities are summarised in Attachment A. Generally, the feedback pertained to:
- (a) Support for the Plans, and acknowledgment of alignment between the intent of the plans and the goals of the submitting organisations. Some submissions called on the City to go further and mandate new or higher performance benchmarks.
 - (b) Details of relevant initiatives and accomplishment by the organisations.
 - (c) One submission suggested that food waste should be given a higher profile in the Making Sydney a Sustainable Destination plan.
 - (d) One submission raised concerns about the ability for hotels to reach higher environmental performance standards without incurring unacceptable costs.

KIM WOODBURY

Chief Operating Officer

Anna Mitchell, Senior Sustainability Strategist

Attachment A

**Sector Sustainability Plans
Public Exhibition
Consultation Report**

Sector Sustainability Plans Public Exhibition Consultation Report July 2018

Public Exhibition

Public exhibition was held from 20 February 2018 to 17 April 2018.

The two sector sustainability plans were placed on public exhibition on SydneyYourSay.

- Sydney's Sustainable Office Plan: <https://www.sydneyyoursay.com.au/sydney-sustainable-office-plan>
- Making Sydney a Sustainable Destination Plan: <https://www.sydneyyoursay.com.au/making-sydney-sustainable-destination>

Online engagement statistics

Making Sydney a sustainable destination

- Total visits: 693
- Document downloads: 233

Sydney's sustainable office plan:

- Total visits: 628
- Document downloads: 296

Consultation activities

Industry newsletters:

Promotion of the plans was included in the following industry newsletters:

- ASBEC March 2018 newsletter
- Energy Efficiency Council, March 2018
- Tourism Accommodation Australia Member Newsletter, April 2018
- Green Building Council of Australia member newsletter, April 2018

Briefings:

City staff presented the Plans at the following industry meetings during the public exhibition period:

- Sydney Metro Councils Environmental Forum – March meeting
- NABERS team, Office of Environment & Heritage
- Property Council of Australia NSW Sustainability Roundtable
- Property Council of Australia Hotels Committee meeting
- Better Buildings Partnership leadership panel
- Commercial Buildings Disclosure Scheme stakeholder forum
- Sustainable Destination Partnership Workshop 2 participants (27 individual stakeholders)
- Tourism Accommodation Australia energy workshop
- World Wide Fund for Nature
- Griffith Institute for Tourism Advisory Board meeting

Media:

Fifth Estate, 6th March 2018 <https://www.thefifthestate.com.au/business/government/city-of-sydney-pushes-for-a-net-zero-office-sector/97946>

Submissions

The City received the following number of submissions:

	Individual Submissions	Industry Submissions	Total Submissions
Sydney's Sustainable Office Plan	1	7	8
Making Sydney a Sustainable Destination Plan	2	9	11

Note: one industry submission (NABERS) included feedback on both plans.

The City's response to issues raised in the submission is detailed in following tables.

Sydney's Sustainable Office Plan

Respondent	Key points from submission	Plan updated?	Details of change
Individual	<ul style="list-style-type: none"> Important Ideas for sustainable offices: <ul style="list-style-type: none"> Minimal lights left on in empty buildings at night Mandatory green roofs, internal/external greenery External window shading Stair access prominent Modifiable air conditioning temperatures and use of ceiling fans 	No	No change
The projects	<ul style="list-style-type: none"> Interested in getting involved to make their office sustainable 	No	City staff contacted the organisation
Built	<ul style="list-style-type: none"> Supports the plan Promotion of net zero office buildings important Plan doesn't put enough importance on buildings achieving Green Star ratings (a great way for developers to prove their buildings meet sustainable development guidelines via a third party certification) Recommends including minimum requirements for Green Star ratings associated with DAs granted in the CoS area 	No	<p>Green Star ratings are mentioned in the plan and supported by the City.</p> <p>The City is unable to make Green Star ratings a mandatory requirement for DAs.</p>
AMP Capital	<ul style="list-style-type: none"> Supports plan, particularly the focus on extending the onus of responsibility onto corporate tenants to do more AMP Capital Wholesale Office Fund (AWOF) has a target to be zero carbon by 2030 Actively engaged with the Better Buildings Partnership, and have projects underway that are aligned to the key themes of the plan AMP Capital Real Estate's portfolio electricity costs rose 30% from 2017 to 2018, so finding operational cost savings is a key focus 	No	No change

Respondent	Key points from submission	Plan updated?	Details of change
Property Council of Australia	<ul style="list-style-type: none"> • Supports plan • Supports sustainable design and practises in the commercial office building sector • Supports the fostering of increased collaboration between tenants and landlords to address issues relating to split-incentives and tenant disengagement with energy efficiency • Area of substantial opportunity is in the engagement of building tenants to drive sustainable outcomes - managing their own environmental performance within their tenancy and create market demand for landlords to improve the performance of the buildings 	No	No change
Green Building Council Australia (GBCA)	<ul style="list-style-type: none"> • The vision, opportunities and actions detailed in the plan generally reflect the shared view of industry and that of the GBCA • GBCA looks forward to continuing to work closely with CoS • Policies and initiatives identified as matters of importance to our members and our organisation and the focus of GBCA are: <ul style="list-style-type: none"> - Carbon Positive Roadmap - Renewable energy and decentralised utilities - Opportunity knocks –Accelerating energy efficiency for mid-tier buildings - Building Code Energy Performance Trajectory Project (See submission for more details on each focus point) • <i>“Design and construct new buildings to the highest level of sustainability performance available”</i> and section related to <i>“City support for developers”</i> <ul style="list-style-type: none"> - The GBCA calls on the City of Sydney to encourage and/or incentivise developers planning to deliver any new buildings within the City, to go beyond a commitment to the highest NABERS Energy rating and aim for Green Star certification as this will deliver a range of benefits and outcomes in line with the plan. • Linked to GBCA’s focus area, Carbon Positive Roadmap, to deliver net zero building standards 	No	<p>No change</p> <p>The plan notes the importance of third party environmental ratings including Green Star</p>

Respondent	Key points from submission	Plan updated?	Details of change
Australian Institute of Refrigeration, Air Conditioning and Heating (AIRAH)	<ul style="list-style-type: none"> • Strongly supports the plan • Recommends the City push boundaries on world first HVAC rating tool and include the requirement to use and publish calculating cool findings (in conjunction with NABERS ratings) http://www.calculatingcool.com.au/#/home • Consider aiming for a zero leakage for refrigerants in the city (refrigerant management is recognised as #1 action to reverse climate change in Paul Hawken's book - DRAWDOWN – drawdown.org.) • Optimise existing HVAC systems (this covers a range of activities focusing on activities such as cleaning coils, maintenance etc.) – will also reduce heat rejection and hence less water requirement for cooling towers. 	No	No change
National Australian Built Environment Rating System (NABERS)	<ul style="list-style-type: none"> • Strongly supports both plans • Interested in working closely with CoS in many of the proposed measures (see submission for full list of areas of interest) 	No	No change

Making Sydney a sustainable destination

Respondent	Key points from submission	Plan updated?	Details of change
National Australian Built Environment Rating System (NABERS)	<ul style="list-style-type: none"> Strongly supports both plans Interested in working closely with CoS in many of the proposed measures (see submission for full list of areas of interest) 	No	No change
Individual	<ul style="list-style-type: none"> Many good points Mentions upgrades to restaurant lighting but not to restaurant kitchens, where a great deal of energy is commonly wasted and where there are some simple fixes Recommends collaboration with industry and incentives for restaurant energy efficiency Examples include installing induction cooktops and new dishwashers found here http://www.greenhotelier.org/our-themes/energy-efficiency-in-the-kitchen/ 	Yes	Page 6 – Added text to note that modelled measures are not an exhaustive list of the ways in which energy can be saved
Individual	<ul style="list-style-type: none"> Sydney is becoming dominated by cement from buildings, roads and various infrastructure and losing too many of its large trees Recommends a dedicated tree planting effort to cool the city, with trees such as Port Jackson Figs 	No	No change
The Animal, Tree and Homeless Campaign	<ul style="list-style-type: none"> Stop: <ul style="list-style-type: none"> the light rail project killing trees and plant more immigration as it is not sustainable Recommends: <ul style="list-style-type: none"> council run night and day ferry tours improve Sydney's bus and heavy rail open more cafes and restaurants on top of Sydney's high rise buildings 	No	No change
Tourism Accommodation Australia (NSW)	<ul style="list-style-type: none"> Looks forward to working with the City and the government to deliver on this plan but would reinforce the importance of subsidised benchmarking, achievable targets and a genuine funding partnership. Page 19 and 20 - members see 'Awareness and Information' as less of an issue than education on putting together a bespoke business case that justifies the return on investment to the owner. A priority is for a consistent ratings system to be established and agreed to, 	No	The Plan includes actions for the City to share information about the business benefits of sustainability

Respondent	Key points from submission	Plan updated?	Details of change
	<p>with costs largely subsidised by the City of Sydney together with the operator of the system on the condition of majority participation.</p> <ul style="list-style-type: none"> • Funding not just for operators who have never benchmarked but for all operators in the first year with ongoing subsidised funding in later years. • Set targets which are more realistically achievable. In support of an aspirational target, however a six star NABERS rating would need a considerable investment and most buildings will not reach six star due to the makeup of that building location and uses together with heritage requirements. • Statement on page 21 that the goal is to achieve 'net zero emissions' is largely unachievable in a hotel because of the 24/7 operations • <i>"The City will investigate the inclusion of planning control provisions that require new hotel developments or major refurbishments to make minimum NABERS Energy Commitment Agreements"</i>. No clear understanding of what these 'minimum Energy Commitments' are and also the financial implications. • Need to be careful not to add further regulatory barriers without some offset. • Need planning controls in place to prevent the conversion of residential buildings into short term accommodation to ensure that the additional costs resulting from 'minimum Energy Commitments' do not further tilt the playing field. • Recommendation for waste management companies to provide a green slip/care that identifies the amount of waste by weight and the location in which it is being disposed into land fill. • Does not feel that the rollout of the current CDS scheme has been effective. • Recommend that the support the City will provide be more clearly articulated. 		<p>The City supports the use of 3rd party ratings and recognises that there is more than one tool in use in the sector</p> <p>The City recognises that introduction of a requirement for NABERS Energy Commitment will require stakeholder engagement and education</p> <p>The City is advocating for improved data in the waste sector</p>
Green Building Council Australia (GBCA)	<ul style="list-style-type: none"> • Supports plan • Welcomes the opportunity to work with CoS and organisations in specifying environmental ratings for accommodation and venues in their procurement policies. 	No	No change

Respondent	Key points from submission	Plan updated?	Details of change
	<ul style="list-style-type: none"> • Sydney has a great sustainability story to tell. Within the city boundaries are 128 Green Star-rated projects, as well as a 6 Star Green Star – Community at Barangaroo South. GBCA. Opportunity exists to work with the CoS to increase the awareness of visitors to Sydney. The GBCA currently provides a walking map of Sydney Green Star buildings on its website and has many case studies that people can access for free. • (see submission for case studies) 		
Supply Chain Sustainability School	<ul style="list-style-type: none"> • Supports plan • The School already provides resources in a wide range of formats including e-learning, case studies and training workshops. • Would like to support communication, awareness, education, engagement, support and change around <ul style="list-style-type: none"> - using and promoting many different environmental ratings - improving waste management from consumption through to recycling and reuse - cost-effective retrofits to buildings and venues - encouraging major organisations to choose certified sustainable locations for accommodation and entertainment conducted for their business - use of on-site solar or renewable energy options - connecting to recycled water where possible • sharing of information around case studies, technology, innovation and success 	No	No change
Pacific Asia Travel Association (PATA)	<ul style="list-style-type: none"> • Congratulates CoS for its efforts • Negative perception of sustainability by tourism sector is largely due to confusion or a misunderstanding of what 'Sustainability' actually is • Communication not covered in the plan <ul style="list-style-type: none"> • Recommends using 'Authentic Video' contents to communicate with all relevant stakeholders identified within the report by empowering them to tell 'their' stories 	No	Note that City has identified the importance of communication with the sector and has numerous actions related to this

Respondent	Key points from submission	Plan updated?	Details of change
Griffith Institute for Tourism, Griffith University	<ul style="list-style-type: none"> • Congratulates CoS on its leadership with particular consideration of tourism's carbon footprint • Hotels are major energy consumers and because of their opportunity to engage staff and customers, they act as important multipliers 	No	No change
The Business Travel Consulting Group (BTCG)	<ul style="list-style-type: none"> • Supports plan and is finds it easy to read and understand • Recommends including historical summary of work done to date (almost reads as if CoS has done nothing so far and this is the first plan of action) and current programs and their success to date • Benchmark the program to other global cities and how the plan compares to Stockholm, Los Angeles, Berlin, Hong Kong etc. • Consider an appendix with current tools in place for residents/businesses (e.g. free online tool showing how much can be saved by adding solar to the rooftops such as - http://pv-map.apvi.org.au/sunspot) 	No	<p>A summary of the City's previous work is on page 16.</p> <p>The City uses the Global Destination Sustainability Index to benchmark</p> <p>The City will be sharing relevant resources via online methods.</p>
World Wide Fund for Nature (WWF)	<ul style="list-style-type: none"> • WWF welcomes this initiative • No clear statement of how to measure progress made to accomplish this plan (pages 33-34) due to broad scope of the plan • Recommends being specific about what kind of waste and include food waste where relevant • Recommends getting businesses to pledge a commitment to guidelines and goals in return CoS advertises businesses for their sustainability efforts and achievements • Food waste could be addressed more explicitly in the plan given facts on page 15 and could include a food waste introduction page 	Yes	<p>Additional text about monitoring implementation of the plan included on page 34</p> <p>The Sustainable Destination Partnership requires participating organisations to commit to working on sustainability</p> <p>Additional section on food waste has been included on page 22, a case study on the Hilton Sydney's work on reducing food waste on page 23</p>

Attachment B

Making Sydney a Sustainable Destination

Making Sydney a Sustainable Destination

August 2018



A plan for environmental sustainability
in the accommodation and entertainment sector



Sydney2030 / Green / Global / Connected



Contents

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01 Executive Summary

Together we can build Sydney's reputation as a leading sustainable destination for tourist and business travellers.

In creating Sustainable Sydney 2030, Sydney's community members – residents, visitors, workers and businesses – established their vision of a sustainable future. To support achieving this vision, the City of Sydney has set bold targets including a 70 per cent emissions reduction for the local government area from a 2006 baseline, and net zero emissions by 2050. These targets are in line with the historic 2015 Paris Climate Agreement, which commits over 130 parties, including Australia, to pursue efforts to limit the global temperature increase to less than 1.5 degrees.

The city's accommodation and entertainment sector has a crucial role to play in helping to achieve these targets and in doing so can leverage significant economic opportunities.

Environmental sustainability in Sydney's accommodation and entertainment venues can lead to long-term economic savings of up to \$32 million by 2030, and new market opportunities that in turn boost visitor numbers and local employment figures.¹

The landscape in which the city's accommodation and entertainment venues operate is changing. By 2025, the millennial generation will represent 75 per cent of the global workforce. This generation expects businesses to be active citizens and demands that those businesses help them live sustainably. A study by Nielsen revealed that about 72 per cent of millennial respondents were willing to pay extra for sustainable offerings.

¹ Interim (2022) and 2030 Abatement Potentials: Final Report, Strategy. Policy.Research., 2017



Chinese New Year festivities in Darling Harbour, February 2017. Photographer Damain Shaw / City of Sydney

The market for business meetings and events is worth billions globally and sustainability in business events is a global growth market. This is driven by the rise of corporate social responsibility (CSR) and the growth of the green economy.²

This plan supports accommodation and entertainment businesses owners and operators to reduce their environmental impact, in turn saving money, engaging staff and improving guest experience. By responding to this changing demand, businesses will not only remain competitive, but will likely win more of the growing market for sustainable goods and services.

The accommodation and entertainment sector has substantial environmental impacts and in 2015/16 was responsible for 21 per cent of the city's total greenhouse gas emissions, 14 per cent of potable water consumption and 47 per cent of the city's commercial waste, only 50 per cent of which is recycled .

The plan identifies actions for industry to lesson this environmental impact and realise business benefits, including: resource-efficiency upgrades, better waste minimisation processes, higher energy performance standards for new buildings and major refurbishments, including making 6 Star NABERS Commitment Agreements for new hotels. These measures will provide long term economic savings.

The City is dedicating resources to support the sector in taking action. We will provide grants for environmental ratings and assessments. We will promote ways in which the sector can improve its environmental performance, focusing on the business benefits of investing in environmental upgrades. To attract more business events we will work with industry to promote Sydney's environmental performance. And to reinforce the business case for this change, we will advocate that corporations and government agencies preference accommodation and entertainment venues with environmental performance ratings.

These initiatives need to be matched by a substantial increase in renewable energy supply in order for the sector to be on track for net zero emissions.

The City will work with State and Federal government to increase the share of renewable energy into the grid. Stakeholders in the accommodation and entertainment sector can contribute by purchasing GreenPower and investing in onsite solar PV installations where practical.

² "Sustainable Destination Management Trends and Insights: A Path to a Brighter Future", MCI Sustainability Services

³ Environmental Sustainability Platform, City of Sydney 2017

Sector emissions reductions and measures

Between 2005/06 and 2015/16, emissions from the sector fell 37 per cent.

If the below policy measures are implemented through delivery of the actions in this plan, sector emissions could:

- Reduce by 47 per cent by 2021/22 (from 2006 levels)
- Reduce by 61 per cent by 2029/30 (from 2006 levels)

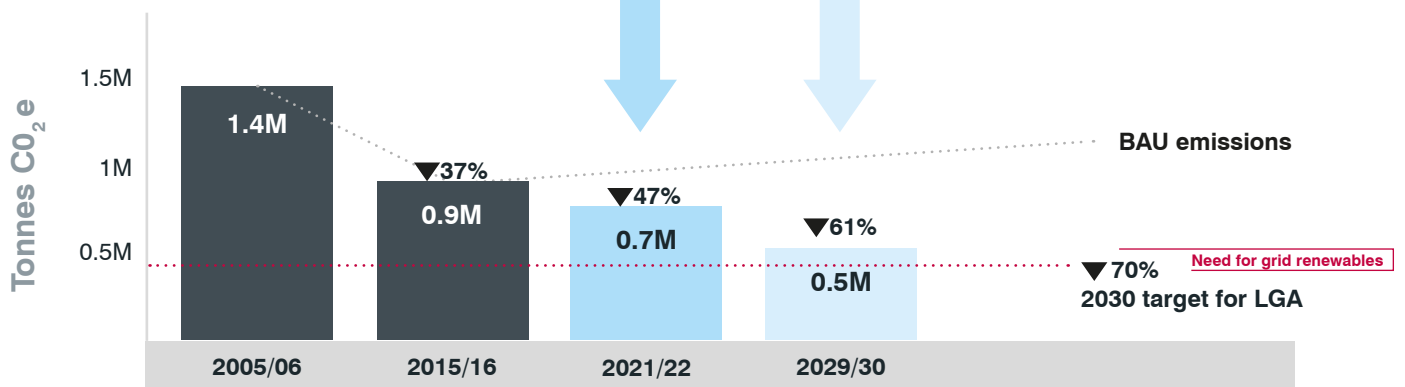
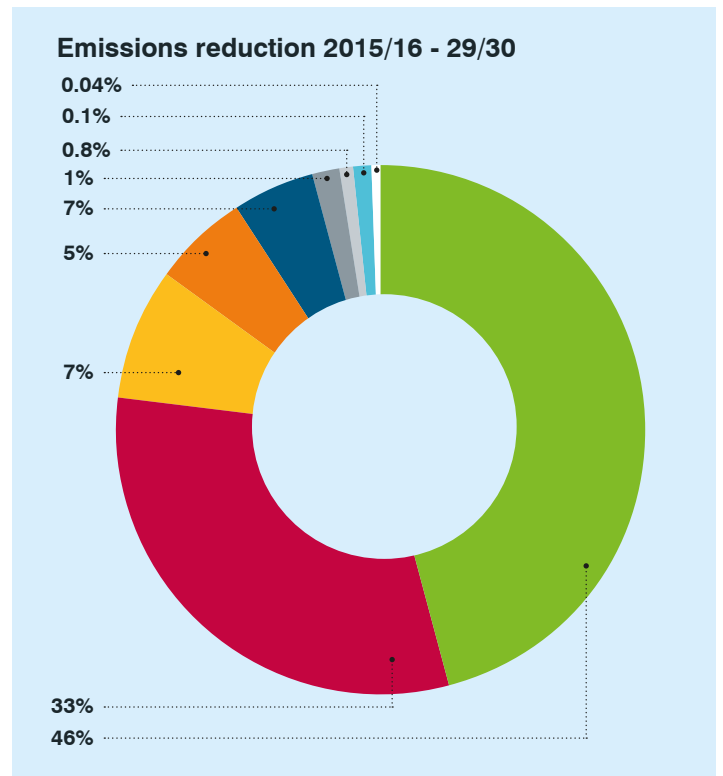
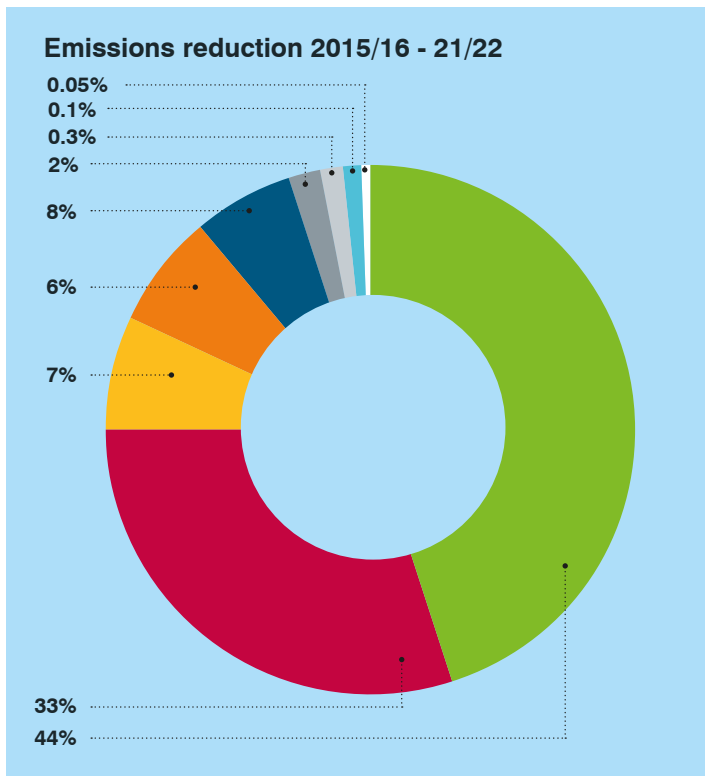
However, there is still a significant gap before the sector's emissions reach the level that the City is aiming for across the local government area - 70 per cent reduction by 2030 from 2006 levels. And an even greater gap exists to the net zero by 2050 target. This gap must be filled by a large increase in renewable energy in the grid, and potentially other energy efficiency measures not yet identified.

More detail on the assumptions behind each measure is available in Appendix A. Please note that this set of measures is not exhaustive and the City anticipates that additional reduction opportunities will be identified.

Carbon emissions reductions

- Commitment to net zero
- Enhanced waste recovery
- Higher standards for new building work
- Building tune ups
- Building retrofits

- On-site solar PV (not including large scale RECs)
- 6 Star Commitment Agreement
- Restaurants - Lighting Upgrades
- Restaurants - Water Upgrades



* Emissions numbers include electricity, gas, waste but not transport



Sydney Opera House

Under business as usual conditions, continuation of current trends in energy efficiency and policy drivers would deliver a reduction in emissions intensity, however this would be offset by projected growth in the sector's floor space. Without implementation of the actions in this plan, emissions for the sector are predicted to increase to 7 per cent above 2015/16 levels by 2029/30.

The actions in this plan can also enable the sector to deliver:

- Zero increase in potable water use from 2006 baseline by 2021/22; and a 9 per cent reduction by 2029/20, achieved through water efficiency and recycled water
- An increase in resource recovery to divert 70 per cent of waste from landfill by 2021/22; and up to 90 per cent by 2029/30.

Actions

This plan outlines opportunities and areas of action for:

- Sector leaders - owners and operators
- Accommodation owners and operators
- Entertainment owners and operators
- Event organisers and their clients
- Building developers
- Government organisations
- Visitors and delegates
- Restaurants, bars and other businesses

The following table summarises these actions and also the ways in which the City will provide support.

Industry action and City support

Sector leaders – owners and operators

- Show commitment to environmental leadership
- Undertake building retrofits to achieve environmental outcomes, where cost effective
- Collaborate on best practice models
- Advocate for increased minimum standards and policy reform to reward environmental performance

City support

- Encourage and support collaboration between sector leaders to facilitate building retrofits, recognising best practice, showcasing business benefits and supporting advocacy for policy reform to affect sector-wide change
- Proactively work with the operators of City-owned properties to influence positive environmental outcomes

Accommodation owners and operators

- Use environmental performance ratings to benchmark and identify opportunities for improvement; and publicly report ratings
- Commit to achieving net zero emissions from your building and develop a pathway to get there, including, but not limited to, purchasing renewable energy
- Install on-site solar where possible
- Require better waste data and management solutions from contractors
- Encourage staff and guests to use active transport, promoting the City's bike maps, free route planning service, and bike hire companies servicing the city area
- Provide incentives to guests to reduce their impact
- Use recycled water for cooling tower use where possible

Entertainment owners and operators

Privately owned entertainment venues can:

- Use environmental performance ratings to benchmark and identify opportunities for improvement; and publicly report ratings
- Commit to achieving net zero emissions from your building and develop a pathway to get there, including, but not limited to, purchasing renewable energy
- Install on-site solar where possible
- Promote accommodation with environmental performance ratings to clients and visitors
- Encourage visitors to walk, cycle and use public transport options where possible
- Require better waste data and management solutions from contractors

In addition, government-owned entertainment venues can:

- Access support to achieve the Government Resource Efficiency Policy (GREP) targets from the Sustainable Government Team, which provides support to meet policy obligations

Tenants and production companies can:

- Request venue owners and operators to improve environmental performance and take short-term steps such as asking for energy and water-intensity data, what efficiency measures have been implemented by the venue, and if sub-metering is in place

City support

- Provide grants for independent ratings and assessments
- Support environmental innovation through the provision of grants and the sharing of success and knowledge
- Assess the barriers to recycled water uptake and identify solutions
- Develop and deliver a tune-up program supporting owners and operators to improve the environmental performance of their buildings
- Encourage and support collaboration between sector leaders to facilitate building retrofits, recognising best practice, showcasing business benefits and supporting advocacy for policy reform to affect sector-wide change
- Distribute wayfinding maps and signage, and information on cycling and walking in the city
- Collect a suite of sustainable tools with business value and disseminate through industry association newsletters, conferences and workshops promoting business benefits
- Promote the use of the updated Guidelines for Waste Management in New Developments
- Influence private sector companies to institute a policy for staff and events to use hotels/venues with independent environmental performance ratings
- Support the identification of skills and training gaps as the sector progresses to deeper environmental upgrades and work with industry to address these
- Collect energy, water and waste-intensity data to track industry progress
- Identify priority waste streams, investigate opportunities, and disseminate proven solutions through industry channels
- Support owners/operators to pilot new waste technology and innovations
- Support the development of waste education, engagement and incentives tailored for hotel housekeeping systems and staff
- Advocate for state government agencies to standardise waste data collection definitions and processes and reinstate annual reporting

Event organisers and their clients

- Actively promote Sydney's sustainability credentials
- Incorporate environmental performance ratings on supplier listings
- Ensure procurement policies and events criteria give preference to service providers demonstrating environmental performance
- Implement best practice event waste management practices
- Require better waste data and management solutions from contractors
- Provide bike valet parking at events

City support

- Publish a list of accommodation providers with recognised environmental ratings to assist event organisers and corporate and government clients to evaluate the environmental performance of providers
- Work with online booking agents to incorporate environmental performance ratings in their listings
- Assist with bids for major events by providing information on Sydney's sustainability, the city's environmentally rated hotels and venues, walking and cycling paths, and sustainable events, experiences and/or tours
- Work with Business Events Sydney and Destination NSW to improve Sydney's listing on the Global Destination Sustainability Index as part of a broader campaign to promote Sydney as a sustainable event destination
- Partner with media and industry associations to profile business benefits gained by the sector from improving environmental performance
- Distribute wayfinding maps and signage, and information on cycling and walking in the city
- Identify priority waste streams, investigate opportunities, and disseminate proven solutions through industry channels
- Measure the environmental impacts of City events, improve performance and report outcomes

Industry action and City support

Developers

- Commit to the highest NABERS energy Commitment Agreement, (and other NABERS CAs as they become available)
- Install on-site solar where possible
- Install the highest standard WELLS rating water fixtures for water efficiency
- Look to be dual-plumbed for recycled water use, where there will be a source of recycled water
- Provide suitable waste management infrastructure for maximum resource recovery as per the City's Waste Management in New Development Guidelines.
- Provide ample, well located bike parking for staff and visitors

City support

- Provide grants for independent environmental ratings and assessments
- Encourage the design, construction and operation of net zero hotels, both new and existing
- Investigate the inclusion of planning control provisions that introduce NABERS Energy Commitment Agreements, for new hotels and major refurbishments.

Visitors and delegates

- Choose environmentally rated accommodation, engage with sustainability initiatives such as walking, cycling and using public transport wherever possible
- Ask for information on the City's Culture Walks app, bike maps, free route planning service, and bike hire companies servicing the city area, from traditional bike tours to electric bicycles

City support

- Investigate options for the best way to provide city-wide public domain wifi
- Distribute wayfinding maps and signage, and info on cycling and walking in Sydney
- Support the advocacy of industry associations for:
 - The removal of airport station access fees
 - Train travel to be promoted by event and conference organisers
 - Event and conference organisers recommending hotels with environmental ratings

Government

Australian Government

- Increase National Construction Code (NCC) minimum environmental performance standards for building and refurbishments (Responsibility of the Council of Australian Government's Australian Building Codes Board)
- Increase compliance with NCC minimum environmental performance standards for building and refurbishments (Responsibility of the Council of Australian Government's Australian Building Codes Board)
- Consider green depreciation for building owners undertaking refurbishments as part of the potential Commonwealth tax reforms
- Promote the National Carbon Offset Standard for Carbon Neutral Buildings to building owners; and develop programs to encourage certification

NSW Government

- Commit to achieving net zero emissions from government buildings and develop a pathway to get there, including, but not limited to, purchasing renewable energy
- Adopt policies to procure accommodation and event venues with environmental performance ratings, moving to minimum ratings when capacity has been built in the market
- Develop case studies on how to include environmental credentials of hotels in procurement policies
- Deliver waste market reform to incentivise resource recovery

City support

- Advocate for increased minimum environmental performance standards in building codes and appliances
- Advocate for government agencies to adopt policies to procure accommodation and event venues with independent environmental performance ratings

Restaurants, bars and other businesses

- Upgrade to energy-efficient lighting and water-efficient fixtures
- Improve recycling and waste management by undertaking a waste audit and talking to neighbours and building owners about better waste management
- Request on-street visitor bike parking from the City
- Explore partnerships and services to reduce environmental impact

City support

- Collect a suite of sustainable tools with business value and disseminate through industry association newsletters, conferences and workshops promoting business benefits
- Provide practical information on money-saving measures when the City's environmental health officers visit to complete compliance checks
- Provide on-street visitor bike parking (subject to space availability)
- Identify priority waste streams, investigate opportunities, and disseminate proven solutions through industry channels

02 Our vision for Sydney as a sustainable destination

Accommodation and entertainment providers with high environmental performance ratings will benefit from the growing demand for sustainable venues and experiences

By 2030, the sector can reduce its emissions by 61 per cent and potable water use by approximately 9 per cent. The sector can also aim to increase its resource recovery to 90 per cent, in line with the City's target for the whole commercial sector.

Vision for the sector in 2030:

- New developments are designed and constructed to the highest level of sustainability performance available
- Existing accommodation and entertainment venues continuously improve resource efficiency and disclose their environmental performance with the aim to be net zero by 2050
- Government and corporate business procurement policies specify minimum environmental ratings for suppliers of accommodation and venues
- Sector leaders collaborate on best practice environmental performance and access to renewable energy supply
- Tools and resources are available to address barriers to resource efficiency and continuous improvement
- Businesses have the skills and capacity to design, develop, measure and manage environmental performance in buildings
- Visitors seek out businesses that help them enjoy Sydney sustainably and prioritise active and public transport options
- Disclosure of rating data and information on environmental performance allows the City to recognise leadership and results.

03 About the sector

Over 14 million visitors come to Sydney each year

The accommodation and entertainment sector makes a significant contribution to the local economy. Over 14 million visitors came to Sydney in 2017, making Sydney Australia's largest accommodation market. Accommodation buildings in City of Sydney are worth about \$7.8 billion⁴. Visitors contributed over \$16.7 billion to metropolitan Sydney's economy in 2017.⁵

The City's 2015 Visitor Accommodation Action Plan⁶ encourages new and diverse hotel developments to accommodate a growing number of visitors. Currently, 15 hotels and 5 serviced apartments are expected to be built within our local government area over the next 5 years. Online platforms such as Airbnb and Stayz have also contributed to new tourist accommodation supply through people sharing their homes. This growth will build on the city's current hotels to help Sydney remain Australia's premier destination.

There are 45 major entertainment venues in the City's area. These include convention, sporting, exhibition and conference venues, from the Sydney Opera House, International Convention Centre, Sea Life Sydney Aquarium and the Sydney Cricket Ground to the Entertainment Quarter and Fox Studios.

Industry associations that represent the sector are key to influencing industry. Providers of event services, booking agents and government agencies that promote tourism to Sydney and organise events and exhibitions are also important.

4 As of September 2013 and based on 23,128 rooms as per Jones Lang LaSalle (JLL), Sydney Hotels Supply & Demand Study: Stage 1, November 2013, p. 63

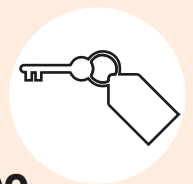
5 'Destination NSW Travel to Sydney 2017 Report'

6 http://www.cityofsydney.nsw.gov.au/_data/assets/pdf_file/0003/238422/Visitor-Accommodation-Action-Plan.pdf

The city's accommodation is made up of:



20,000
hotel rooms



5,500
serviced apartment
rooms



7,000
backpacker
hostel beds



6,000+
short term letting
listings



Hotels account for **70%**
of the floor space dedicated
to visitor accommodation.



Chinese New year festivities, Circular Quay, January 2017. Photographer Jessica Lindsay

**Visitors contributed: \$16.7 billion** to metropolitan Sydney's economy in 2017.

Over 14 million visitors come to Sydney each year



33% of domestic 
and 11% of international visitors come for business⁷ 

⁷ 'Destination NSW Travel to Sydney 2017 Report'

04 Environmental performance in the sector

More accommodation and entertainment providers could take the opportunity to improve their environmental impact, report their performance and gain business benefits

This sector has substantial environmental impacts. Accommodation needs lights, air conditioning and ventilation 24 hours a day. Entertainment venues also use energy-intensive stage lights, sound systems and air conditioning.

Food and beverage services significantly add to energy and water consumption and waste generation. Up to one-third of commercial waste is food; greenhouse emissions from food waste are 20 times that of carbon dioxide emissions. Paper and plastic are the two other major components of commercial waste; these resources can be recycled.

This sector has substantial environmental impacts and is currently responsible for:



21% of the city's total GHG emissions

14% of potable water consumption



47% of the city's commercial waste



of which only **50%** is recycled



Sydney Opera House, December 2015. Photographer Brett Hemmings / City of Sydney / Getty Images

4.1 Existing buildings

Many accommodation and entertainment providers have taken up popular initiatives such as recycling, energy-efficient lighting retrofits and water-saving projects⁸, but more can be done.

Less than 30 per cent of Sydney's accommodation and entertainment venues rate their environmental performance through recognised ratings. Ratings provide various benefits, from improving asset value, operational efficiency, benchmarking performance, guest experience and/or staff satisfaction.⁹

The low uptake of environmental ratings is likely due to a low level of awareness by owners and operators of such ratings and perceived lack of demand by the market.³ Some businesses without ratings may have made environmental improvements, but it is difficult for the market to compare and reward businesses that do not disclose their performance.

Over the last 3 years, the City's Smart Green Business program has worked with over 230 businesses in the accommodation and entertainment sector on improving their environmental performance. Each business has cut operational costs by an average of \$15,940 per annum, through average reductions of 3.7 million litres of potable water, 39 tonnes of waste to landfill and 56 tonnes of carbon emissions.

⁸ Accommodation & Entertainment Sector Survey prepared for the City of Sydney by Woolcott Research and Engagement – June 2016
⁹ City of Sydney Accommodation and Entertainment Stakeholder Engagement

Schwartz hotels reduce impact

The Schwartz Family Group implemented Smart Green Business' resource efficiency recommendations, reducing water use by 17 megalitres per annum across the portfolio, leading to energy-related hot water savings of over 830,000 megajoules per annum. The Group is also diverting 374 tonnes of materials from landfill each year. The combined projects achieve a total greenhouse gas emissions reduction of 487 tonnes per annum and reduced operating costs are estimated to be \$124,000 year on year.

Schwartz hotels participating in Smart Green Business include Mercure, IBIS World Square and IBIS King Street Wharf.

Sydney Opera House upgrades

The Sydney Opera House has invested in environmental performance upgrades and is using the Green Star tool to benchmark performance. The Sydney Opera House was awarded a 4 Star Green Star 'performance rating' in 2015 by the Green Building Council of Australia. Upgrading the lighting systems in the Concert Hall reduced electricity consumption from lighting by 75 per cent, and resulted in annual savings of \$70,000 per year. The Sydney Opera House is also EarthCheck certified and in 2016 released their Environmental Sustainability Plan. The plan outlines long term goals for the Opera House including carbon neutrality, a 5 Star Green Star 'performance rating' and 14 per cent energy savings.



Town Hall House solar panels, October 2010. Photographer: Paul Patterson

4.2 New buildings

Sydney has had a shortage of accommodation supply, particularly in 3 star hotels. In recent years, there has been strong growth in the supply of short-term holiday letting by online providers.¹⁰ There are now 20 new accommodation developments in the planning pipeline, which will provide 3,000 new rooms in the next 5 years.¹¹

While these new developments must comply with the National Construction Code (NCC), the NCC's efficiency requirements fall short of securing environmental performance in operations. Unfortunately, at present only 36 per cent of these new developments showed some level of commitment beyond the minimum NCC compliance standards. Only 20 per cent are committing to environmental ratings in design and construction.¹²

In relation to water fixtures, approximately one-half committed beyond the minimum NCC compliance standards and 34 per cent have committed to installing the highest performing Water Efficiency Labelling and Standards Scheme (WELS) water appliances currently available.

Owners and operators are increasingly aware of the asset and operational value of sustainable high performance buildings, but are often not involved in the planning of infrastructure and services in design and construction. More often than not properties are bought and management rights contracted after the property is designed and constructed. This misses the most cost-effective opportunity to secure resource efficiency in operations – in the process of design and construction.

In some cases, new developments need to balance heritage issues as well as sustainability. The Sydney Opera House lighting upgrade and Sydney Town Hall solar photovoltaic installation are good examples of how environmental sustainability can be incorporated without compromising heritage value. Owners and operators stand to benefit from investments in design, amenity and environmental sustainability that respect heritage value.

Our surveys¹³ show the sector is willing to adopt further environmental practices and ratings, particularly where financial advantage and a point of difference can be gained.

Low levels of awareness and knowledge may be inhibiting further uptake of environmental sustainability. There may be a need to promote environmental rating tools and ways in which the sector can improve its environmental performance, focusing on the business benefits of investing in environmental upgrades.

¹⁰ City of Sydney Visitor Accommodation Action Plan 2015

¹¹ City of Sydney Visitor Accommodation Monitor

¹² City of Sydney review of ESD commitments in development applications

¹³ City of Sydney Accommodation and Entertainment Stakeholder Engagement



International Convention Centre, Darling Harbour. Photo: ICC Sydney

International Convention Centre

The International Convention Centre Sydney (ICC Sydney), is part of the Darling Harbour precinct. The precinct was successfully awarded a 6 Star Green Star Communities v1 rating from the Green Building Council of Australia. The Convention Centre is also set to achieve a Gold Certification in Leadership in Energy and Environmental Design from the US Green Building Council.

The ICC Sydney is home to the first community-funded solar energy project. The 520kW array powers approximately 5 per cent of the baseline energy for the ICC. The not-for-profit provider of the community solar project was supported with an innovation grant from the City.

The ICC Sydney recycled 91 per cent of total construction waste and has systems in place to meet its target of diverting 75 per cent of its operational waste from landfill. A rainwater harvesting system will meet 100 per cent of irrigation and 63 per cent of toilet flushing demands. Design targets for the building include 20 per cent less greenhouse gas emissions, 25 per cent less energy and 14 per cent less potable water than minimum requirements¹⁴.

Only about 20 per cent of hotels currently in planning and development stages in the City are committing to environmental ratings in design and construction.

¹⁴ <http://www.iccsydney.com.au/social-responsibility>

05 Challenges

Accommodation and entertainment venues can be twice as energy intensive as office buildings and three times that of residential apartments.

Operations round the clock, commercial kitchens, on-site laundry services and conferencing facilities in hotels, and the heating and cooling of large open spaces in entertainment theatres and museums, all use vast amounts of energy. Showers, baths, pools and gardens mean these venues are also water intensive. Commercial food and beverage services also require water and generate significant levels of waste.¹⁵

5.1 Competing business priorities and split incentives

With a shortage of supply, Sydney hotels have enjoyed high occupancy and room rates in recent years.¹⁶ Investment in sustainability in new hotel developments and upgrades to existing visitor accommodation can be hard to warrant when business is good.

Looking at the building life cycle, the majority of a building's impact is in operations, but the most cost-effective time to secure environmental performance is in design and construction. Therefore for new developments, the incentive to invest in environmental performance is split. The costs are borne by the developer but the benefits go to the final owner and operator.

Ideally, collaboration would be encouraged between the developer, the owner and the operator to maximise the sustainability of design and infrastructure to secure environmental performance in operation.

Developers will only prioritise the integration of sustainability design and construction when there is broad demand for accommodation with environmental performance from owners, operators and visitors.

While operators understand the business case for environmental performance, with benefits in lower costs and increased revenue, capital constraints are a significant barrier for existing buildings to improve performance. Energy use is often controlled by the operator, while investment in the building and its infrastructure is controlled by the owner. Operators are driven by profit and loss, owners by investment return and low overheads. Essentially, efficiency is advantageous to both parties in profit share and asset value, but currently, environmental projects compete with 'front of house' priorities.

¹⁵ Accommodation & Entertainment Sector Emission Modelling Final Foundation Report, Pitt & Sherry 2016

¹⁴ JLL Sydney Hotels market report



Cafe Sydney, Customs House, July 2015. Photographer: Josef Nalevansky

5.2 Low minimum standards

All new buildings need to comply with the mandatory provisions of the National Construction Code, but these fall short of securing sustainability in operation.

The City's Development Control Plan encourages applicants to implement the principles of ecologically sustainable development but these are guidelines rather than requirements.

5.3 Perception that environmental sustainability compromises luxury

Quality upgrades contribute to and secure guest experience and amenity now and in the future. Environmental sustainability does not compromise luxury, but rather secures the potential to experience luxury, for future generations.

Smart Green Business participants have seen the benefits of environmental sustainability, for example, having implemented water-efficiency retrofits with no guest complaints. To the contrary, guests and staff welcome environmental initiatives.

5.4 Awareness and information

The broader industry is less aware of the business benefits of sustainability and the available information, resources and incentives. Specialist advice is often required and time-constrained building engineers often rely on product and service providers for information, who may not provide independent advice on environmental performance options.

“The market is not dictating that we have to be green. If guests are not demanding it, there is no interest in larger upgrades. When they start demanding sustainability, upgrades will happen promptly”

Hotel operator

This type of information has in the past been disseminated through industry associations, but industry focus on the issue fell away with the abolition of the carbon tax. Proactive individuals can access information through a proliferation of membership organisations, sustainability programs and environmental rating schemes.¹⁷

5.5 Lack of incentives

Ultimately, the major challenge is the lack of incentive to invest when there is a shortage of supply and high occupancy rates. While some government and corporate bodies specify sustainability as a condition for their staff accommodation and events, for the majority, availability, price and location take precedence.

06 Opportunities

Stronger environmental standards, coordinated advocacy, and partnerships could create many more business opportunities

6.1 New developments

The City of Sydney and the NSW government have committed to achieving net zero emissions by 2050. New developments are important opportunities to ensure new buildings don't lock in increased emissions and poor resource efficiency.

New accommodation and entertainment developments have the opportunity to design to the highest level of environmental rating for performance, operational efficiency and long-term asset value.

Strengthening the minimum standard through the National Construction Code will happen in time, but owners and developers can now envision what hotels should look like in 2050 to secure premium hotels with best practice in sustainability.

New hotels can anticipate accommodating the growing market of sustainable business events; government departments and corporations with sustainability policies; and the luxury leisure visitor looking to have an impact-free, guilt-free stay.

Designing to the highest sustainability standard, new developments would be future-proofed for a more discerning market, meeting more than the current minimum standards and avoiding the future need for costly retrofits.

The NSW Office of Environment and Heritage has recently developed a NABERS Energy Commitment Agreement tool for hotels. Analysis undertaken for this plan determined that significant emissions savings can be achieved if new hotel developments make high rating NABERS Energy Commitment Agreements. This could be achieved by amending the City's planning controls to specify minimum standards, which would require the support of the state government. The City will investigate the inclusion of planning control provisions that require new hotel developments or major refurbishments to make minimum NABERS Energy Commitment Agreements.

6.2 Resource efficiency

As noted earlier, buildings designed for leisure and entertainment tend to be resource intensive. For example, hotels are twice as energy and water-intensive than office buildings in impact per square metre. This intensity can mean that efficiency measures can result in greater environmental and economic savings on a per site basis. Also, equipment in this sector tends to be less frequently replaced, and older centralised plant and management systems can be less efficient.

Financial savings are a significant driver for environmental upgrades, to both owners and operators. Capital is the greatest hurdle. In the City of Sydney, 75 per cent of accommodation is hotels, the majority operated under Hotel Management Agreements. Hotel Management Agreements tend to be long-term, sometimes 10 to 25 years, so are a good platform for collaboration between owners and operators.

Hotels are typically valued on a net revenue multiplier; therefore, any reduction in costs should have a positive impact on valuation. For example, a new chiller for a hotel property that is set to decrease energy costs by \$50,000 may not represent big savings, but the overall impact on value of the asset could be as much as \$500,000-\$600,000, depending on the yield applied.

The greatest cost for hotel operators is staff. Turnover is high compared to other sectors, so engaged employees can save recruitment and training costs and drive performance. Operators noted that resource efficiency initiatives are often very effective in engaging and ultimately retaining staff.

“Our guests are very happy with the quality and feel of the low flow showers. No one has suggested they are not luxurious.”

Hotel operator

6.3 Demand for sustainable events and business travel

Sustainability is a growth area in the global events industry.¹⁸ New industries in renewable energy, electric cars and ecological design, as well as the rise of corporate social responsibility, are leading to sustainability considerations being integrated into the governance and decision-making of major corporate clients. Government and industry associations are updating procurement policies to secure supplier standards that go beyond safety – to sustainability.

Good sustainability policy and practice is a competitive advantage in business events and meetings. The majority of international event clients now cite sustainability in their specifications and criteria. These specifications are increasingly part of a comprehensive sustainability strategy, rather than a one-off event requirement.

Environmental sustainability can now be key to winning contracts for these major clients. And organisers can access resources, standards and rating tools to assist them to meet client requirements, integrate sustainability and choose suppliers who demonstrate sustainability.

The new International Convention Centre Sydney lifts Sydney’s sustainable event credentials. Business Events Sydney, experts in winning international events, welcome Sydney’s listing on the Global Destination Sustainability Index (GDS-Index).

Global Destination Sustainability Index (GDS-Index)

The GDS-Index is a collaborative business initiative created to help destinations, convention bureaux, event planners and suppliers drive the adoption, promotion and recognition of responsible practices in the business tourism and events industry. The GDS-Index does this by measuring and comparing the social and environmental sustainability strategies, policies and performance of participating destinations and by sharing best practice from around the world. In 2017 Sydney was ranked joint 15th.

<http://gds-index.com/>

6.4 Enhanced waste recovery

Food waste is estimated to represent up to one third¹⁹ of waste generated by this sector. For many businesses food waste is sent directly to landfill. This presents an opportunity to improve the environmental performance of the A&E sector through waste avoidance and recycling. Waste avoidance can deliver reduced energy consumption, water use, cost and less waste being sent to landfill. Food waste that does occur has the potential to be diverted from landfill to create other products, fertilisers, animal feed and energy.

¹⁸ GDS-Index Sustainable Destination Management Trends and Insights, 2016

¹⁹ https://www.epa.nsw.gov.au/~/_/media/EPA/Corporate%20Site/resources/managewaste/150464-love-food-hate-waste-study.ashx



Barangaroo Reserve, March 2017. Photographer: Katherine Griffiths

Reducing food waste at Hilton Sydney

In 2017, Hilton Sydney conducted three food waste studies as an initial step towards reducing waste and increasing diversion from landfill. The audits and follow-up actions were supported by the World-Wide Fund for Nature (WWF) and the NSW Environmental Protection Authority, as part of their 'Love Food Hate Waste' program.

As a result, Hilton Sydney introduced several innovations to reduce food waste, including:

- New waste bins and waste bin procedures to separate organic waste (mainly food) from general waste and recyclables
- A full review of recipes within food and beverage outlets, and of ordering guidelines
- Adjusting menus and reducing meals to smarter portion sizes
- Increasing donations of edible food surplus to charity:
 - 5,448 meals went to OzHarvest in 2017
 - Partnering with Addison Road Community Centre, who collect on average 40 meals per day from Hilton Sydney's breakfast buffet in glass brasserie
- Installing a Pulp Master machine which captures and transforms food and organic waste into reusable pulp, this is then sent to a biogas facility to be transformed into a renewable energy source.

In combination, the food waste initiatives have resulted in significant savings in waste disposal costs and reduced the volume of food waste by around 15 percent annually. As a result of these improvements, the overall landfill diversion rates have increased from 25 per cent to over 50 per cent.

6.5 Environmental ratings

Office buildings in Australia have been benchmarking and disclosing energy ratings since 1999. This has resulted in improvements in performance with resource efficiency upgrades in order to attract premium tenants. Environmental ratings allow businesses to understand their impact, identify opportunities and improve performance.

Public reporting can improve reputation and attract and retain new business. Owners and operators of accommodation who have implemented environmental upgrades say they have saved money, engaged staff and increased asset value. But many are not obtaining independent environmental certification to gain recognition and tap into the growing demand for sustainability services.

Scandinavian cities have high levels of third-party certification. Only 30 per cent of Sydney accommodation has environmental performance ratings, whereas in Stockholm, 80 per cent of hotels and 85 per cent of venues have independent certification.

A key requirement for the GDS-Index is the number of accommodation and venue providers with third-party certification within walking distance from sustainable venues.

6.6 Encouraging visitors to walk, cycle and use public transport

Sydney suffers traffic congestion. If a visitor's first impression of Sydney is in a taxi from the airport stuck in standstill traffic, they will not experience Sydney as a sustainable destination. Whether visitors come for business or pleasure, travel agents, event organisers and accommodation providers can encourage visitors to use the airport train and public transport, hire a bike and walk to enhance their experience and avoid traffic.

07 Industry action – and support from the City

Each part of the sector can act to improve environmental performance and enhance its offering

To seize opportunities, the sector needs to act boldly and quickly. Leaders can collaborate with each other, owners can look to invest in building upgrades, operators can rate and improve performance, organisers can foster sustainability partnerships, and clients and visitors can then reward these businesses with bookings and good reviews. It is important that all levels of government update their policies to foster businesses that contribute to environmental sustainability.

The following proposed actions have been informed by research, stakeholder consultation and emissions modelling.

7.1 Sector leaders – owners and operators

The International Convention Centre, Sydney Opera House and one-third of hotels use recognised ratings to demonstrate their environmental performance. Others take action on sustainability without using environmental ratings. These leaders report similar challenges and barriers to performance improvement and a desire to collaborate on solutions and advocacy for policy reform for sustainability.

Sector stakeholders communicated key concerns related to environmental sustainability: traffic congestion, being penalised with increased energy tariffs for efforts in energy efficiency, and the challenges of waste management contracts and data collection.

Leading owners and operators can:

- Showcase their commitment to environmental leadership
- Undertake building retrofits to achieve environmental outcomes, where cost effective
- Collaborate on best practice models and tools to address barriers to improved environmental performance
- Advocate for increased minimum standards and policy reform to incentivise and reward environmental performance.

The City will:

- Encourage and support collaboration between sector leaders to facilitate building retrofits, recognising best practice, showcasing business benefits and supporting advocacy for policy reform to affect sector-wide change.
- Proactively work with the operators of its own properties to influence positive environmental outcomes.



Vibe Hotel, Rushcutters Bay. Photo supplied by TFE Hotels

7.2 Accommodation owners and operators

Over 50 per cent of the sector's greenhouse gas emissions in 2015/16 were attributed to accommodation: hotels (42 per cent), backpackers (10 per cent) and serviced apartments (1 per cent).

Accommodation contributes 66 per cent of the sector's water consumption: over 50 per cent by hotels, 16 per cent by serviced apartments and 2 per cent by backpacker accommodation. These figures are somewhat conservative, as they do not include water consumption from restaurants and catering services.

Whereas accommodation generates relatively less waste proportional to entertainment venues, both are responsible for significant amounts of food waste and recyclables going to landfill.

However, accommodation providers reported that the business case for environmental performance retrofits is often outweighed by front-of-house upgrades. Winning business clients and better guest satisfaction as a result of environmental performance could help prioritise environmental improvements.

Sector stakeholders communicated key concerns related to environmental sustainability: traffic congestion, being penalised with increased energy tariffs for efforts in energy efficiency, and the challenges of waste management contracts and data collection.

Efficiency at TFE Group

Thirteen city hotels from the TFE Group, including Vibe, Adina and Travelodge properties, have implemented a range of resource efficiency recommendations which have resulted in positive environmental and economic outcomes. Water efficiency measures have achieved a total water reduction of 46 megalitres per annum across the portfolio. Additionally, this has led to energy-related hot water savings of 194,065 megajoules per annum. Lighting upgrades across the portfolio resulted in total energy reductions of over 115 megawatt hours per annum. Adjustments to recycling systems to maximise the capture and collection of paper/cardboard and co-mingled materials has seen their portfolio divert 259 tonnes of materials away from landfill each year.

These projects, recommended by the City's Smart Green Business Program, have delivered a total greenhouse gas emissions reduction of 477 tonnes per annum and an estimated \$185,000 in reduced annual operating costs.

Government-owned entertainment venues can access support to achieve environmental targets from the NSW Sustainable Government Team.

TripAdvisor's GreenLeaders program already provides a platform for hotels and B&Bs with environmental practices to connect with travellers seeking to reduce their environmental footprint. While this will not necessarily convince all users, making this type of information available can support sustainability; as accommodation supply increases, it allows customers to distinguish between different accommodation providers.

Owners and operators can:

- Use environmental performance ratings to benchmark and identify opportunities for improvement; and publicly report ratings
- Commit to achieving net zero emissions from your building and develop a pathway to get there, including, but not limited to, purchasing renewable energy
- Install on-site solar where possible
- Require better waste data and management solutions from contractors
- Use recycled water for cooling tower use where possible
- Encourage staff and guests to use active transport, promoting the City's bike maps, free route planning service, and bike hire companies servicing the city area
- Provide incentives to guests to reduce their impact.

The City will:

- Provide grants for independent ratings and assessments
- Support environmental innovation through the provision of grants and the sharing of success and knowledge
- Assess the barriers to recycled water uptake and develop solutions

- Develop and deliver a tune-up program supporting owners and operators to improve the environmental performance of their buildings
- Encourage and support collaboration between owners and operators to facilitate building retrofits, recognising best practice, showcasing business benefits and supporting advocacy for policy reform to affect sector-wide change
- Distribute wayfinding maps and signage, and information on cycling and walking in the city
- Collect a suite of sustainable tools with business value and disseminate through industry association newsletters, conferences and workshops promoting business benefits
- Influence private sector companies to institute a policy for staff and events to use hotels/venues with independent environmental performance ratings
- Support the identification of skills and training gaps that become apparent as the sector progresses to deeper environmental upgrades and work with industry to address these
- Collect energy, water and waste-intensity data to track industry progress
- Promote the use of the updated Guidelines for Waste Management in New Developments
- Identify priority waste streams, investigate opportunities, and disseminate proven solutions through industry channels
- Support owners/operators to pilot new waste technology and innovations
- Support the development of waste education, engagement and incentives tailored for hotel housekeeping systems and staff
- Advocate for state government agencies to standardise waste data collection definitions and processes and reinstate annual reporting.



Town Hall, February 2017. Photographer: Katherine Griffiths

7.3 Entertainment

Entertainment venues are responsible for 17 per cent of the sector's emissions, 13 per cent of water and over 20 per cent of the sector's waste.

Entertainment venues often upgrade their operational efficiency as part of continual improvement or refurbishment programs.

Venues and theatres often pass on utility costs in venue hire charges to production companies, shows or event managers. As a result, the incentive for investing in energy efficiency to benefit from lower operating costs is largely removed.

Venues do compete for shows and events, but the cost of utilities is not considered to be a significant determinant of whether a venue is chosen or not. Estimates of energy and water consumption can often be used in place of actual data when reporting. Where costs are recognised as a major expense, sub-metering should be in place.

Approximately 50 per cent of entertainment venues in the City of Sydney are government-owned and required under the NSW Government Resource Efficiency Policy (GREP) to reduce their operating costs and ensure they provide leadership in resource productivity.

Privately owned entertainment venues can:

- Use environmental performance ratings to benchmark and identify opportunities for improvement; and publicly report ratings
- Commit to achieving net zero emissions from your building and develop a pathway to get there, including, but not limited to, purchasing renewable energy
- Install on-site solar where possible

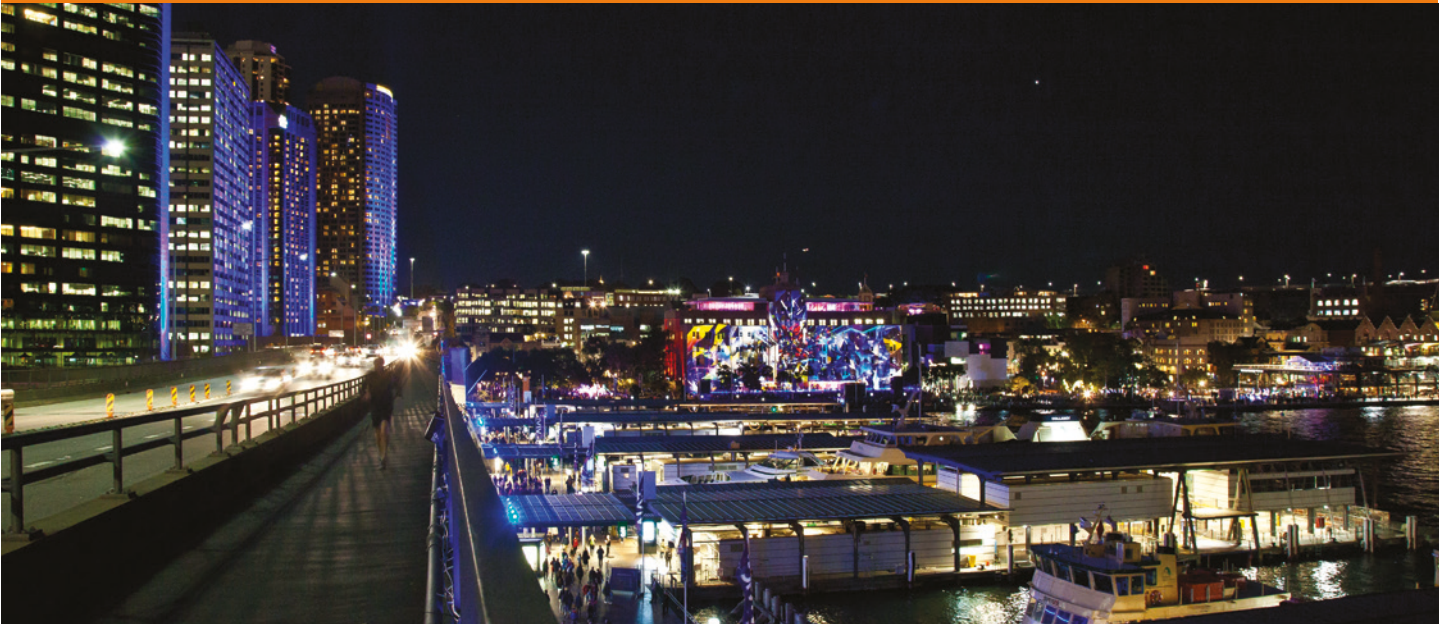
- Promote accommodation with environmental performance ratings to clients and visitors
- Encourage visitors to walk, cycle and use public transport options where possible
- Require better waste data and management solutions from contractors.

Tenants and production companies can:

- Request venue owners and operators to improve environmental performance and take short-term steps such as asking for energy and water-intensity data, what efficiency measures have been implemented by the venue, and if sub-metering is in place

How the City can help:

- Provide grants for independent ratings and assessments
- Support environmental innovation through the provision of grants and the sharing of success and knowledge
- Distribute wayfinding maps and signage, and information on cycling and walking in the city
- Collect energy, water and waste-intensity data to track industry progress
- Promote the use of the updated Guidelines for Waste Management in New Developments
- Support owners/operators to pilot new waste technology and innovations
- Support the development of waste education, engagement and incentives tailored for hotel housekeeping systems and staff
- Advocate for state government agencies to standardise waste data collection definitions and processes and reinstate annual reporting.



Vivid Sydney, Circular Quay, May 2015. Photographer: Paul Patterson

City of Sydney – leading by example:

The City owns or manages several entertainment venues including Sydney Town Hall, the City Recital Hall, the Eternity Playhouse, the Capitol Theatre and Customs House. In some cases, these venues are under long-term lease, and as a result the City has limited control over operations. Where the City has operational control over capital or maintenance, it has invested in refurbishments including lighting and heating, ventilation and air conditioning upgrades. Sydney Town Hall is now being supplied electricity from solar panels on its roof, and electricity, heating and cooling are generated by a low-carbon trigeneration system. Sydney Town Hall and Customs House are also undergoing major energy, water and waste audits to assess further opportunities for improvement. Solar power is generated on 35 City-owned properties. The City's operations are carbon neutral and we were the first government in Australia to be certified as such in 2011.

7.4 Event organisers and their clients

The City will act to reduce the environmental impact of events it approves and manages. The City's Sustainable Event Management Policy and Guidelines encourage, and in some cases require, that events authorised by the City minimise waste generation, reduce energy and water consumption, maximise recycling and the use of renewable energy, and promote principles of sustainability. The sustainability practices of contractors are also considered in the procurement process of all major projects.

In 2016, Destination NSW engaged the Banksia Foundation as the sustainability partner for Vivid Sydney. This resulted in GreenPower accreditation for the Vivid Light Walk and offsetting airline travel and accommodation for a range of artists. EarthCheck was engaged to benchmark and improve the energy, waste and transport impacts of this major international event. Vivid Sydney is just one example of an opportunity to showcase Sydney's sustainability. Vivid Sydney attracted 38,000 people for business events, a 40 per cent increase from last year, and used 60 venues within and outside Sydney.

Business Events Sydney is taking part in the Global Destination Sustainability Index (GDS-Index). Initiated by the Scandinavian chapter of the International Congress and Convention Association and the company MCI, the GDS-Index benchmarks the sustainability performance of worldwide event destinations. So far, Scandinavian cities have been leading the charge and reaping the rewards through hosting some of the most prestigious environmental sustainability meetings in the world. Sydney was first listed on the index in 2016.

Sydney has a great environmental track record and outstanding plans for the future, which Business Events Sydney plans to showcase to the business events industry through the GDS-Index.

Event organisers and their clients can:

- Actively promote Sydney's sustainability credentials (Destination NSW and Business Events Sydney, and conference and event organisers)
- Incorporate environmental performance ratings on supplier listings (booking agents)
- Ensure procurement policies and events criteria give preference to service providers demonstrating environmental performance (event organisers, and corporate and government clients)

Industry action – and support from the City

Westpac Lunar Lantern Hub
澳大利亚西太平洋银行
农历花灯美食街
27 Jan—12 Feb | Daily 5pm—10pm
Martin Place

Cure Brain Cancer's Royal Roosters
治疗脑癌基金会
魔幻紫色皇家公鸡灯
27 Jan—12 Feb
Pitt Street Mall

Chinatown Celebrations
唐人街庆典
27 Jan—12 Feb
Chinatown, Haymarket

Dragon Boat Races
龙舟竞渡
11—12 Feb
Cockle Bay, Darling Harbour

Official Closing Party
官方闭幕派对
12 Feb | From 3pm
Sky Terrace at The Star

Bursting with more than 80 cultural events across 17 days, there are plenty of experiences for the whole family! Visit the Sydney Visitor Centre to collect your free copy of the full program or download the PDF from sydneychinesenewyear.com

Take a short walk around Circular Quay to visit all 12 Lunar Lanterns as part of the Sydney Chinese New Year Festival 2017!

Chinese New Year wayfinding signage, Circular Quay, January 2017. Photographer Jessica Lindsay

- Implement best practice event waste management practices
- Require better waste data and management solutions from contractors
- Provide bike valet parking at events to encourage patrons to use active transport.

The City will:

- Publish a list of accommodation providers with recognised environmental ratings to assist event organisers and corporate and government clients looking to evaluate the environmental performance of providers
- Assist with bids for major events by providing information on Sydney's sustainability, the city's environmentally rated hotels and venues, walking and cycling paths, and sustainable events, experiences and/or tours
- Work with Business Events Sydney and Destination NSW to improve Sydney's listing on the Global Destination Sustainability Index as part of a broader campaign to promote Sydney as a sustainable event destination
- Partner with media and industry associations to profile business benefits gained by the sector from improving environmental performance
- Work with online booking agents to incorporate environmental performance ratings in their listings
- Distribute wayfinding maps and signage, and information on cycling and walking in the city.
- Identify priority waste streams, investigate opportunities, and disseminate proven solutions through industry channels
- Measure the environmental impacts of City events, improve performance and report outcomes.

7.5 Developers

Design for environmental performance in operations

All new developments and refurbishments can seize the most cost-effective opportunity to integrate sustainability, in the design and infrastructure of accommodation and entertainment venues in order to secure resource efficiency in operations. This is particularly important given the immediate growth in development in hotels and serviced apartments.

To do this, there are various tools available to developers. Developments like the International Convention Centre Sydney often use international standards such as Leadership in Energy and Environmental Design (LEED). Green Star, NABERS and EarthCheck are the locally relevant tools in Australia. NABERS is often preferred by hotel owners and portfolio managers as a benchmark of operational energy efficiency across building types.

The City's emissions modelling shows that incorporating higher environmental performance standards in new buildings and refurbishments is the most effective mechanism in the sector for the reduction of greenhouse gases.

Recycled water opportunities

As part of the CBD and South East Light Rail project, recycled water pipelines are expected to be constructed by the NSW state government along George Street between Circular Quay and Central Station by 2018. It is the City's role to facilitate the delivery of a recycled water scheme that utilises this pipeline. Buildings close to George Street will be able to access recycled water for all non-potable uses including cooling tower use, toilets, laundry and irrigation.

Initially, existing buildings will be able to connect cooling towers to recycled water, while future buildings



Bourke Street cycleway, July 2010. Photographer: Richard Birch

or buildings undergoing major refurbishments will be able to connect to recycled water for all non-potable uses. It is important to ensure that new development is future-proofed through the inclusion of dual plumbing for recycled water where it will be available.

The City is looking to connect its own water-intensive assets, including Hyde Park, Town Hall and other buildings in the George Street corridor, to recycled water, in line with its target of a zero increase in potable water use by 2030 from the 2006 baseline.

For all new accommodation and entertainment developments and refurbishments, developers can:

- Commit to the highest NABERS energy Commitment Agreement, (and other NABERS CAs as they become available)
- Install the highest standard WELLS rating water fixtures for water efficiency
- Look to be dual plumbed for recycled water use where there will be a source of recycled water
- Provide suitable waste management infrastructure for maximum resource recovery as per the City's Waste Management in New Development Guidelines
- Provide ample, well-located bike parking for staff and visitors to encourage active transport.

The City will:

- Provide grants for independent environmental ratings and assessments
- Encourage the design, construction and operation of net zero hotels, both new and existing
- Investigate the inclusion of planning control provisions that introduce NABERS Energy Commitment Agreements, for new hotels and major refurbishments.

7.6 Government

Many stakeholders argued for the need for stronger regulation and minimum standards to improve energy efficiency and environmental sustainability, similar to European standards and policies.

The City commissioned independent research that showed the most effective policy to encourage better performance in buildings is to increase minimum energy and water efficiency requirements for new buildings and refurbishments.

Government agencies can:

Australian Government

- Increase National Construction Code (NCC) minimum environmental performance standards for building and refurbishments (Responsibility of the Council of Australian Government's Australian Building Codes Board)
- Increase compliance with NCC minimum environmental performance standards for building and refurbishments (Responsibility of the Council of Australian Government's Australian Building Codes Board)
- Consider green depreciation for building owners undertaking refurbishments as part of the potential Commonwealth tax reforms
- Promote the National Carbon Offset Standard for Carbon Neutral Buildings to building owners; and develop programs to encourage certification

Industry action – and support from the City



Darling Harbour, October 2011. Photographer: Paul Patterson

NSW Government

- Commit to achieving net zero emissions from government buildings and develop a pathway to get there, including, but not limited to, purchasing renewable energy
- Adopt policies to procure accommodation and event venues with environmental performance ratings, moving to minimum ratings when capacity has been built in the market
- Develop case studies on how to include environmental credentials of hotels in procurement policies
- Deliver waste market reform to incentivise resource recovery

The City will:

- Advocate for increased minimum environmental performance standards in building codes and appliances
- Update its own procurement policies, advocate to government agencies to update their policies.

7.7 Visitors and delegates

Visitors and delegates can make choices about their own behaviour to lessen their environmental impact. They can choose accommodation with environmental ratings, opt to not have sheets and towels replaced every day and where possible walk, cycle and use public transport.

It is recognised that visitors are often keen to explore Sydney on foot or by bicycle, taking in all of the sites and having an authentic experience. However, accessing service providers and finding your way is not always easy in an unfamiliar city.

Environmental ratings make finding information on environmental performance easier and more credible. However, many smaller boutique hotels and pub and clubs are also making genuine efforts, and their efforts shouldn't be discounted.

Accommodation concierges can:

- Promote the City's Culture Walks app, bike map for route planning, and receiving expert advice through the free route planning service
- Promote bike hire companies servicing the city area, from traditional bike tours to electric bicycles.



Finger Wharf, Woolloomooloo, April 2017. Photographer Katherine Griffiths

How the City can help:

- Distribute wayfinding maps and signage, and info on cycling and walking in Sydney
- Support the advocacy of industry associations for:
 - The removal of airport station access fees
 - Train travel to be promoted by event and conference organisers
 - Event and conference organisers recommending hotels with environmental ratings
- Investigate options for the best way to provide city-wide public domain wifi

7.8 Restaurants, bars and other businesses

Everyone can contribute to making Sydney a sustainable destination in a way that suits their business model. Restaurants, cafes, pubs and small businesses providing goods and services to the city's visitors can benefit from upgrading resource efficiency.

Small businesses can:

- Upgrade to energy-efficient lighting and water-efficient fixtures
- Complete a waste audit to improve recycling and talk to neighbours and building owners about better waste management
- Explore partnerships and services to reduce environmental impact
- Request on-street visitor bike parking from the City.

The City will:

- Collect a suite of sustainable tools with business value and disseminate through industry association newsletters, conferences and workshops promoting business benefits
- Provide practical information on money-saving measures when the City's environmental health officers visit to complete compliance checks
- Provide on-street visitor bike parking (subject to space availability).
- Identify priority waste streams, investigate opportunities, and disseminate proven solutions through industry channels.

08 Plan development and reporting

The City of Sydney is dedicated to building a culture of sustainability to achieve the objectives of Sustainable Sydney 2030. This plan aims to engage the sector to build awareness and the capacity to act on environmental sustainability opportunities.

8.1 Plan development

The City of Sydney's research identified accommodation and entertainment as a priority sector. This is because of its relative resource intensity, the growth in its development and the fact that environmental improvements generate business benefit as well as contribute to sustainability targets.

Over the last few years, the City's Smart Green Business program has supported accommodation and entertainment providers to reduce their water consumption and waste generation. Participating businesses have saved money, become aware of their environmental impact, and achieved positive outcomes for their customers and staff.

Targeted engagement was undertaken to gain insights across the City of Sydney's accommodation and entertainment sector, with the aim to test the City's assumptions on the barriers to and incentives for environmental sustainability. An External Reference Group was convened to provide the City with strategic, technical and policy advice and influence the development and delivery of the plan.

The Reference Group consisted of representatives from a number of key government and private organisations, which included: the NSW Government Office of Environment and Heritage; the NSW Government Department of Planning and Environment; UrbanGrowth NSW; the NSW Department of Industry; Transport for NSW; the Green Building Council of Australia; the Property Council of Australia; the Better Buildings Partnership; the Energy Efficiency Council; the Facility Management Association of Australia; Engineers Australia; Sydney Water; and Jemena.

The City also met with representatives of industry associations, and accommodation, events and entertainment providers. There was support and interest across the board for the development of the plan and there was an overall consensus on the drivers for and barriers to environmental improvements within the sector.

A number of opportunities identified in these meetings are included in the suite of actions in this plan. Feedback during consultation also reinforced the need and desire for continued engagement with sector stakeholders.



Ombretta Cafe, Glebe, 2015. Photographer: Adam Hollingworth

An industry survey was commissioned to gain insights more broadly across the sector: 99 respondents were asked about environmental practices, plans and priorities; awareness and use of sustainability ratings; and barriers and motivators for improving environmental performance. Further research was undertaken to better understand management structures and access to capital.

The City also commissioned detailed greenhouse gas modelling to understand the most cost-effective emissions reduction opportunities for businesses in the sector and the most effective environmental policy measures available to all levels of government.

8.2 Reporting

A monitoring and evaluation plan will be prepared to enable the City to track progress towards the outcomes stated in this plan. Progress will be reported annually as part of the City's environmental reporting. The plan will be reviewed in 2022, and adapted as required to support the sector's progress towards 2030 goals.

Appendix A: Carbon reduction measures, assumptions and actions

These actions are a sub-set of those outlined earlier in this plan, which also included actions to reduce water use and waste generation, as well enabling actions that don't provide a direct carbon reduction but which are essential to creating change in the industry.

Carbon emissions include electricity, gas and waste but not transport.

Commitment to net zero			
Abatement to 2022	Reduction from 2022 BAU scenario (t CO2-e)	71,700	% of 2015/16 - 21/22 abatement 44%
Abatement to 2030	Reduction from 2030 BAU scenario (t CO2-e)	178,000	% of 2015/16 - 29/30 abatement 46%
Key assumptions	<p>Description:</p> <ul style="list-style-type: none"> Voluntary uptake of renewable energy and/or carbon offsets to achieve net zero emissions <p>Take up rates (% floorspace):</p> <ul style="list-style-type: none"> Hotels: 2022 - 20%; 2030 - 40% Serviced apartments: 2022 - 2.5%; 2030 - 5% Convention Conference Event centres: 2022 - 0%; 2030 - 100% Entertainment Venues – large: 2022 - 10%; 2030 - 70% <p>Savings rate:</p> <ul style="list-style-type: none"> Buildings committed to net zero emissions will achieve a 100% emissions saving 		
City actions	<ul style="list-style-type: none"> Encourage the design, construction and operation of net zero hotels, both new and existing Encourage and support collaboration between sector leaders to facilitate building retrofits, recognising best practice, showcasing business benefits and supporting advocacy for policy reform to affect sector-wide change Support environmental innovation through the provision of grants and the sharing of success and knowledge Advocate for government agencies to adopt policies to procure accommodation and event venues with independent environmental performance ratings Influence private sector companies to institute a policy for staff and events to use hotels/venues with independent environmental performance ratings. Work with online booking agents to incorporate environmental performance ratings in their listings 		
Industry actions	<p>Accommodation and entertainment owners & operators:</p> <ul style="list-style-type: none"> Commit to achieving net zero emissions from your building and develop a pathway to get there, including, but not limited to, purchasing renewable energy <p>Government:</p> <ul style="list-style-type: none"> Promote the National Carbon Offset Standard for Carbon Neutral Buildings to building owners; and develop programs to encourage certification Commit to achieving net zero emissions from your building and develop a pathway to get there, including, but not limited to, purchasing renewable energy 		

Enhanced waste recovery

Abatement to 2022	Reduction from 2022 BAU scenario (t CO2-e)	53,200	% of 2015/16 - 21/22 abatement	33%
Abatement to 2030	Reduction from 2030 BAU scenario (t CO2-e)	128,600	% of 2015/16 - 29/30 abatement	33%
Key assumptions	<p>Description:</p> <ul style="list-style-type: none"> An increase in the diversion of waste from landfill. <p>Diversion rates:</p> <ul style="list-style-type: none"> Hotels: 2022 - 70%; 2030 - 90% Backpackers: 2022 - 40%; 2030 - 50% Serviced apartments: 2022 - 70%; 2030 - 80% Convention/Conference/Event centres: 2022 - 70%; 2030 - 90% Entertainment Venues – large: 2022 - 75%; 2030 - 90% Entertainment Venues – other: 2022 - 40%; 2030 - 50% Restaurant/Eating: 2022 - 60%; 2030 - 75% Pubs/Clubs: 2022 - 60%; 2030 - 70% 			
City actions	<ul style="list-style-type: none"> Identify priority waste streams, investigate opportunities, and disseminate proven solutions through industry channels Promote the use of the updated Guidelines for Waste Management in New Developments Support owners/operators to pilot new waste technology and innovations Support the development of waste education, engagement and incentives tailored for hotel housekeeping systems and staff Advocate for state government agencies to standardise waste data collection definitions and processes and reinstate annual reporting 			
Industry actions	<p>Accommodation owners & operators</p> <ul style="list-style-type: none"> Work with product and service contractors to implement innovative ideas to minimise waste generation on site and to encourage the uptake of re-usable or recyclable materials Require better waste data and management solutions from contractors <p>Entertainment owners and operators</p> <ul style="list-style-type: none"> Require better waste data and management solutions from contractors <p>Event organisers and their clients</p> <ul style="list-style-type: none"> Implement best practice event waste management practices Require better waste data and management solutions from contractors <p>Developers</p> <ul style="list-style-type: none"> Provide suitable waste management infrastructure for maximum resource recovery as per the City's Waste Management in New Development Guidelines. <p>Government</p> <ul style="list-style-type: none"> Deliver waste market reform to incentivise resource recovery <p>Restaurants, bars and other businesses</p> <ul style="list-style-type: none"> Improve recycling and waste management by undertaking a waste audit and talking to neighbours and building owners about better waste management 			

Higher standards for new building work

Abatement to 2022	Reduction from 2022 BAU scenario (t CO2-e)	11,800	% of 2015/16 - 21/22 abatement	7%
Abatement to 2030	Reduction from 2030 BAU scenario (t CO2-e)	28,700	% of 2015/16 - 29/30 abatement	7%
Key assumptions	<p>Description: An increase to the energy efficiency standards in Section J of the National Construction Code that will take effect July 2019. Prior to this, we assume that new floorspace performs better than the average floorspace in 2015-16. This reflects both a higher standard for building work and better compliance to the standard</p> <p>Take up rates (% floorspace):</p> <ul style="list-style-type: none"> Hotels: 100% Backpackers: 100% Serviced apartments: 100% Convention/Conference/Event centres: 100% Entertainment Venues - large: 100% Entertainment Venues - other: 100% Restaurant/Eating: 100% Pubs/Clubs: 100% <p>Savings rate:</p> <p>From 2016-17 to 2018-19</p> <ul style="list-style-type: none"> Electricity: a 10% reduction Gas: a 2.5% reduction <p>From 2019-20</p> <ul style="list-style-type: none"> Electricity A 20% reduction Gas: A 5% reduction 			
City actions	<ul style="list-style-type: none"> Advocate for increased minimum environmental performance standards in building codes and appliances 			
Industry actions	<p>Sector leaders – owner & operators</p> <ul style="list-style-type: none"> Advocate for increased minimum standards and policy reform to reward environmental performance <p>Developers</p> <ul style="list-style-type: none"> Ensure compliance with NCC as standards increase <p>Government</p> <ul style="list-style-type: none"> Increase National Construction Code (NCC) minimum environmental performance standards for building and refurbishments (Responsibility of the Council of Australian Government's Australian Building Codes Board) Increase compliance with NCC minimum environmental performance standards for building and refurbishments (Responsibility of the Council of Australian Government's Australian Building Codes Board) 			

Building tune ups

Abatement to 2022	Reduction from 2022 BAU scenario (t CO2-e)	10,000	% of 2015/16 - 21/22 abatement	6%
Abatement to 2030	Reduction from 2030 BAU scenario (t CO2-e)	18,000	% of 2015/16 - 29/30 abatement	5%
Key assumptions	<p>Description: Tune-up initiatives such as building management system optimisation, retro-commissioning, minor works and power factor correction.</p> <p>Take up rates (% floorspace):</p> <ul style="list-style-type: none"> Hotels: 2022 - 46%; 2030 - 75% Backpackers: 2022 - 15%; 2030 - 38% Serviced apartments: 2022 - 15%; 2030 - 38% Convention/Conference/Event centres: 2022 - 46%; 2030 - 75% Entertainment Venues – large: 2022 - 46%; 2030 - 75% Entertainment Venues – other: 2022 - 46%; 2030 - 75% <p>Savings rate:</p> <ul style="list-style-type: none"> Electricity : A 10% reduction Gas: A 0.65% reduction 			
City actions	<ul style="list-style-type: none"> Develop and deliver a tune-up program supporting owners and operators to improve the environmental performance of their building 			
Industry actions	<p>Accommodation owners & operators</p> <ul style="list-style-type: none"> Upgrade energy and water efficiency and waste practices Provide incentives to guests to reduce their impact Measure and manage environmental impact using environmental performance ratings and publically disclose these <p>Entertainment owners and operators</p> <ul style="list-style-type: none"> Privately owned entertainment venues can: <ul style="list-style-type: none"> Measure and manage environmental impact using environmental performance ratings and publically disclose these Tenants and production companies can: <ul style="list-style-type: none"> Request venue owners and operators to improve environmental performance and take short-term steps such as asking for energy and water-intensity data, what efficiency measures have been implemented by the venue, and if sub-metering is in place <p>Government</p> <ul style="list-style-type: none"> Upgrade energy and water efficiency and waste practices Access support to achieve the Government Resource Efficiency Policy (GREP) targets for government-owned buildings 			

Building retrofits				
Abatement to 2022	Reduction from 2022 BAU scenario (t CO2-e)	13,300	% of 2015/16 - 21/22 abatement	8%
Abatement to 2030	Reduction from 2030 BAU scenario (t CO2-e)	25,200	% of 2015/16 - 29/30 abatement	7%
Key assumptions	<p>Description:</p> <ul style="list-style-type: none"> Retrofit options such as installing new lighting, new HVAC system, new chiller etc. Covering large buildings and hotels, retrofit is considered to require a reasonable change or upgrade in building fitout/technology. <p>Take up rates (% floorspace):</p> <ul style="list-style-type: none"> Hotels: 2022 - 46%; 2030 - 75% Backpackers: 2022 - 15%; 2030 - 38% Serviced apartments: 2022 - 15%; 2030 - 38% Convention/Conference/Event centres: 2022 - 46%; 2030 - 75% Entertainment Venues – large: 2022 - 46%; 2030 - 75% Entertainment Venues – other: 2022 - 46%; 2030 - 75% <p>Savings rate:</p> <ul style="list-style-type: none"> Electricity: A 12.7% reduction Gas: A 5% reduction 			
City actions	<ul style="list-style-type: none"> Encourage and support collaboration between sector leaders to facilitate building retrofits, recognising best practice, showcasing business benefits and supporting advocacy for policy reform to affect sector-wide change Work with the operators of City-owned properties to facilitate building retrofits Collect a suite of sustainable tools with business value and disseminate through industry association newsletters, conferences and workshops promoting business benefits 			
Industry actions	<p>Accommodation owners & operators</p> <ul style="list-style-type: none"> Undertake building retrofits to achieve environmental outcomes, where cost effective <p>Entertainment owners and operators</p> <ul style="list-style-type: none"> Undertake building retrofits to achieve environmental outcomes, where cost effective <p>Government</p> <ul style="list-style-type: none"> Consider green depreciation for building owners undertaking refurbishments as part of the potential Commonwealth tax reforms 			

On-site Solar PV (not including large scale RECs)

Abatement to 2022	Reduction from 2022 BAU scenario (t CO2-e)	3,200	% of 2015/16 - 21/22 abatement	2%
Abatement to 2030	Reduction from 2030 BAU scenario (t CO2-e)	3,000	% of 2015/16 - 29/30 abatement	1%
Key assumptions	<p>Description:</p> <ul style="list-style-type: none"> Cover eligible roofspace in solar panels, assuming 25% of roofspace is currently free. <p>Take up rates (% floorspace):</p> <ul style="list-style-type: none"> Hotels: 2022 - 10%; 2030 – 10% Backpackers: 2022 - 10%; 2030 – 10% Serviced apartments: 2022 - 10%; 2030 – 10% Convention/Conference/Event centres: 2022 - 10%; 2030 – 10% Entertainment Venues - large: 2022 - 10%; 2030 – 10% <p>Savings rate:</p> <ul style="list-style-type: none"> Variable depending upon ratio of roof to floorspace assumed for each sub-sector 			
City actions	<ul style="list-style-type: none"> Work with sector leaders to facilitate uptake of on-site solar 			
Industry actions	<p>Accommodation owners & operators, entertainment owners and operators, developers, government</p> <ul style="list-style-type: none"> Install on-site solar where possible 			

6 Star Commitment Agreements (Hotels)

Abatement to 2022	Reduction from 2022 BAU scenario (t CO2-e)	400	% of 2015/16 - 21/22 abatement	0.3%
Abatement to 2030	Reduction from 2030 BAU scenario (t CO2-e)	3,900	% of 2015/16 - 29/30 abatement	0.9%
Key assumptions	<p>Description:</p> <ul style="list-style-type: none"> Commitment for 6 star NABERS energy rating. <p>Take up rates (% floorspace):</p> <ul style="list-style-type: none"> Hotels: 2022 – 3%; 2030 – 25% <p>Savings rate:</p> <ul style="list-style-type: none"> Electricity: A 64% reduction Gas: A 64% reduction 			
City actions	<ul style="list-style-type: none"> Investigate the inclusion of planning control provisions that introduce NABERS Energy Commitment Agreements, or equivalent, for new hotels and major refurbishments. 			
Industry actions	<p>Accommodation owners & operators</p> <ul style="list-style-type: none"> Commit to the highest NABERS energy Commitment Agreement, or equivalent, when undertaking major renovations <p>Developers</p> <ul style="list-style-type: none"> Commit to the highest NABERS energy Commitment Agreement, or equivalent <p>Government</p> <ul style="list-style-type: none"> Adopt policies to procure accommodation and event venues with environmental performance ratings 			

Restaurants - Lighting Upgrades

Abatement to 2022	Reduction from 2022 BAU scenario (t CO2-e)	200	% of 2015/16 - 21/22 abatement	0.1%
Abatement to 2030	Reduction from 2030 BAU scenario (t CO2-e)	400	% of 2015/16 - 29/30 abatement	0.1%
Key assumptions	<p>Description:</p> <ul style="list-style-type: none"> Retrofit lighting to LED where possible. Additional to major refurbishment which would be covered by higher standards for new building work. <p>Take up rates (% floorspace):</p> <ul style="list-style-type: none"> Restaurant/Eating: 2022 – 11%, 2030 – 20% <p>Savings rate:</p> <ul style="list-style-type: none"> Electricity: 30% reduction in lighting 			
City actions	<ul style="list-style-type: none"> Provide grants for independent ratings and assessments Provide practical information on money-saving measures when the City's environmental health officers visit to complete compliance checks 			
Industry actions	<p>Restaurants, bars and other businesses</p> <ul style="list-style-type: none"> Upgrade to energy-efficient lighting 			

Restaurants - Water Upgrades

Abatement to 2022	Reduction from 2022 BAU scenario (t CO2-e)	100	% of 2015/16 - 21/22 abatement	0.05%
Abatement to 2030	Reduction from 2030 BAU scenario (t CO2-e)	200	% of 2015/16 - 29/30 abatement	0.04%
Key assumptions	<p>Description:</p> <ul style="list-style-type: none"> Installation of flow restrictors to reduce water use. The reduction of hot water use will lead to an energy saving. <p>Take up rates (% floorspace):</p> <ul style="list-style-type: none"> Restaurant/Eating: 2022 – 11%, 2030 – 20% <p>Savings rate:</p> <ul style="list-style-type: none"> Electricity: 30% reduction in hot water Gas: 30% reduction in hot water 			
City actions	<ul style="list-style-type: none"> Provide grants for independent ratings and assessments Provide practical information on money-saving measures when the City's environmental health officers visit to complete compliance checks 			
Industry actions	<p>Restaurants, bars and other businesses</p> <ul style="list-style-type: none"> Improve water management by undertaking an audit and talking to neighbours and building owners about better water management 			



LIGHT MUSIC IDEAS 2015

VIVO
22 MAY - 6 JUNE 2015

ACTING COORDINATORS

- Event: VIVO
- Location: Auckland Convention Centre
- Website: www.vivoconcerts.co.nz
- Facebook: [vivoconcerts](https://www.facebook.com/vivoconcerts)
- Twitter: [vivoconcerts](https://twitter.com/vivoconcerts)
- Instagram: [vivoconcerts](https://www.instagram.com/vivoconcerts)

LIGHT MUSIC IDEAS 2015

CUSTOM





Sydney2030/Green/Global/Connected



Help shape the future of Sydney.
Have your say at
SydneyYourSay.com.au

city of villages

Attachment C

Sydney's Sustainable Office Plan

Sydney's Sustainable Office Buildings Plan

August 2018



A plan for efficient office buildings running on renewable energy



Sydney2030 / Green / Global / Connected

city of villages



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01 Executive summary

Together we can accelerate the number of net zero emissions buildings and harness economic and social benefits

In creating Sustainable Sydney 2030, Sydney's community members – residents, visitors, workers and businesses – established their vision of a sustainable future. To support achieving this vision, the City of Sydney has set bold targets including a 70 per cent emissions reduction for the local government area from a 2006 baseline, and net zero emissions by 2050. These targets are in line with the historic 2015 Paris Climate Agreement, which commits over 130 parties, including Australia, to pursue efforts to limit the global temperature increase to less than 1.5 degrees.

The City has also set targets for 50 per cent renewable energy by 2030, 70 per cent commercial waste recovery by 2021 and no increase in potable water consumption by 2030 from a 2006 baseline.

We cannot meet these targets through the City's actions alone. This plan calls on the whole office sector: government agencies, building owners, tenant companies, their employees, building managers and developers to act together to improve environmental performance for the benefit of all.

A number of property companies and office based organisations are already demonstrating international excellence in sustainability action¹ and the City's current policies and voluntary programs have so far motivated some leading organisations in the office sector to reduce consumption². However, substantial cost effective opportunities for emissions reduction and water and waste efficiency³ remain in the sector.

Office buildings and their occupants were responsible for 45 per cent of carbon emissions, 20 per cent of commercial waste and 27 per cent of water consumption in our local government area in 2015/16.

Reducing overall energy and water consumption levels in the sector will go a long way towards meeting the environmental targets we set out in Sustainable Sydney 2030. Improving the environmental performance in office buildings will also: reduce costs through lower energy use and overheads; increase asset value; support employee wellbeing and productivity⁴; manage corporate risk and address directors' fiduciary obligations.⁵

The City of Sydney has an international reputation as a leader on sustainable buildings. Through this and other plans, we support leaders to accelerate towards net zero emissions buildings and support wider government policies that secure renewable energy to power these buildings. We will encourage innovation and leadership and continue to raise the bar on voluntary practice. We also support policies to create new buildings that do not generate new emissions.

For those yet to take action, this plan will stimulate activity by advocating for higher minimum standards for new build and refurbishment work and mandatory disclosure of NABERS Energy ratings for tenancies in office buildings. For the rest of the sector, we will continue our business support programs and to call for market signals and incentives to create market pressure. We will support accelerated uptake of renewable energy for all through advocacy, government partnerships and direct investment.

1 [CDP 2016](#) – NAB, Westpac; [2016 GRESB Report](#) – Lendlease, DEXUS; [Dow Jones Sustainability Index 2016 Components List](#) – Stockland, Mirvac, GPT, DEXUS, Westpac,

2 [CitySwitch Program Report 2016](#), [BBP Annual Report 15/16](#)

3 [Pitt & Sherry Office Sector Emission Modelling Final Foundation Report 2016](#)

4 [Why Choose a High Performing Building](#), CitySwitch

5 [Australian Institute of Company Directors](#), 2016



World Square / City of Sydney

A substantial increase in renewable energy supply is key to this strategy. NSW's current renewable energy supply is 14 per cent⁶ and Australia's supply is 17 per cent⁷.

The federal government's 2020 Renewable Energy Target aims to increase the supply to 23 to 24 per cent of the total electricity demand. However, this is insufficient to achieve the Sustainable Sydney 2030 environmental targets or make an equitable contribution to international

efforts to limit global warming to 1.5 degrees. The City will work with State and Federal government to increase the share of renewable energy into the grid.

The office sector already leads progress towards Sydney's sustainable future. The sector needs to maintain this leadership position and be the first to build and operate net zero buildings.

Each of us has a role



Developer

- Design and construct for highest environmental performance



Building Owner

- Rate and disclose base building environmental performance
- Invest in renewables
- Use green leases to collaborate with tenants



Building Manager

- Implement environmental upgrades
- Measure and share savings
- Consider full lifecycle of equipment



Building Tenant

- Choose a high-performance building
- Rate and disclose environmental performance
- Engage staff and collaborate with building owner

Government support

City - Support through programs, grants and advocacy

State - Drive innovation, build capacity and provide infrastructure

Commonwealth - Increase renewable energy supply and elevate minimum standards



6 NSW Renewable Energy
7 Clean Energy Australia

Sector emissions reductions and measures

Between 2005/06 and 2015/16, emissions from the sector fell 14 per cent.

If the below policy measures are implemented through delivery of the actions in this plan, sector emissions could:

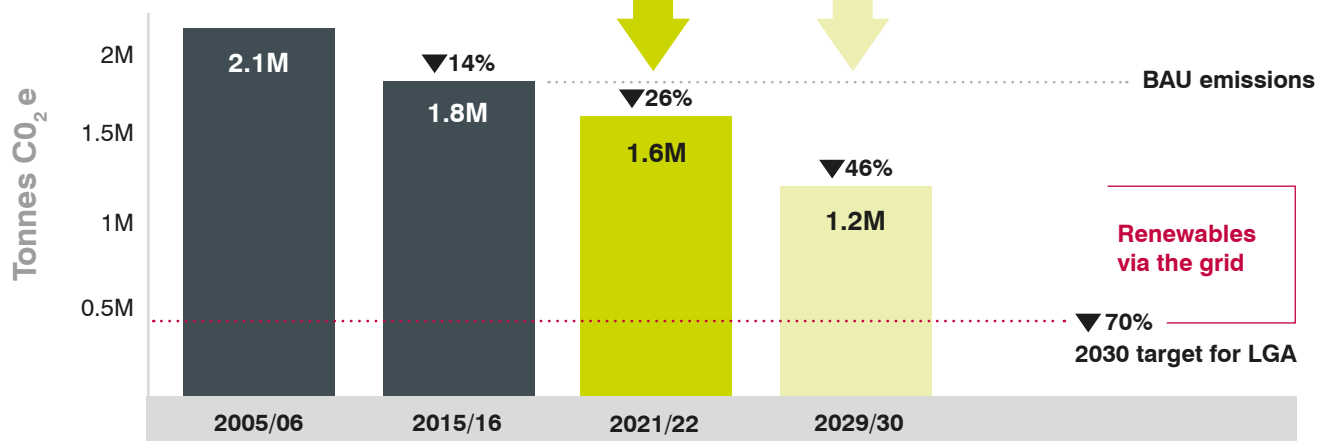
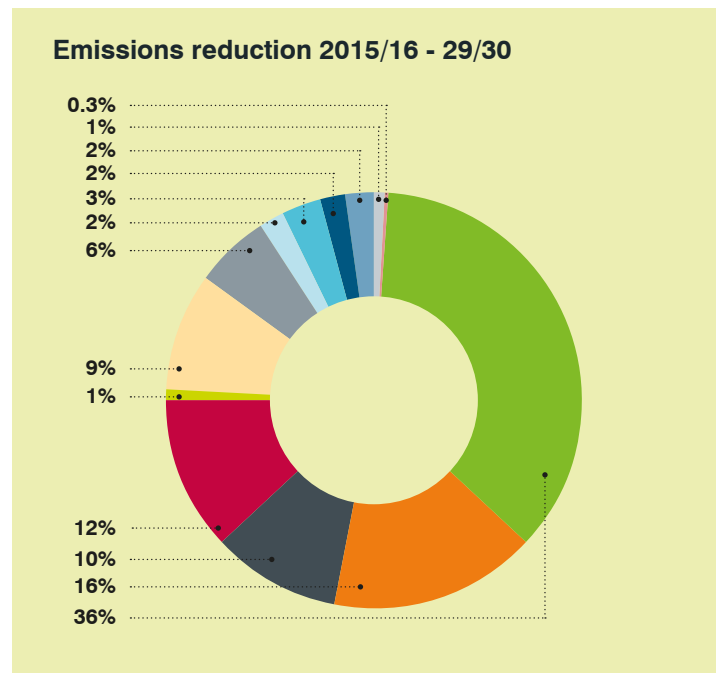
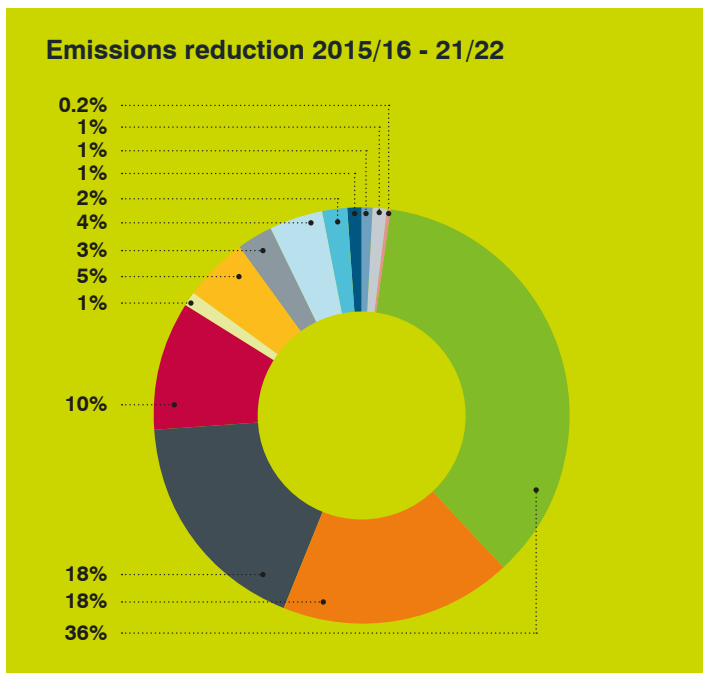
- Reduce by 26 per cent by 2021/22 (from 2005/06 levels)
- Reduce by 46 per cent by 2029/30 (from 2005/06 levels)

However, there is still a significant gap before the sector's emissions reach the City's target for the local government area - 70 per cent reduction by 2030 from 2006 levels. And an even greater gap exists to the net zero by 2050 target. This gap must be filled by a large increase in renewable energy in the grid, and potentially other energy efficiency measures not yet identified.

More detail on the assumptions behind each measure is available in Appendix A.

Carbon emissions reductions

- Renewable energy campaign
- Expansion of Commercial Building Disclosure Scheme
- NABERS Commitment Agreements
- Higher energy standards in National Construction Code
- Increased compliance with National Construction Code
- Enhanced Minimum Energy Performance Standards
- CitySwitch Growth
- NSW Government Leasing requirement for 6 stars NABERS energy
- National financial incentives
- Data driven campaigns
- Voluntary best practice standards
- Environmental grants and building tune-up program
- Waste Strategy Implementation



* Emissions numbers include electricity, gas, waste but not transport



Photographer: Jamie Williams / City of Sydney

Actions

This plan outlines opportunities and areas of action for:

- Building owners
- Office building tenants
- Building managers
- Developers
- Government

The table on page 8-10 summarises these actions and also the ways in which the City will provide support.

Without implementation of the actions in this plan, emissions for the sector are predicted to remain at 2015/16 levels until 2030. Under business as usual conditions, continuation of current trends in energy efficiency and policy drivers would deliver a reduction in emissions intensity, however this would be offset by projected growth in the sector's floor space.

These actions would also help Sydney achieve net zero emissions by 2050 – a goal adopted by the Greater Sydney Commission, the NSW state government, and many countries, states and organisations, such as Mirvac, Investa and AMP Capital.

The actions in this plan can also enable the sector to deliver:

- Zero increase in potable water use from 2006 baseline by 2021/22; and a 9 per cent reduction by 2029/30, achieved through water efficiency and recycled water
- An increase in resource recovery to divert 70 per cent of waste from landfill by 2021/22; and up to 90 per cent by 2029/30.

Industry actions and City support

Owners	Office building tenants
<p>Energy and emissions</p> <ul style="list-style-type: none"> • Implement environmental upgrades • Rate and disclose NABERS Energy performance ratings for base building, combined and whole building in collaboration with tenants • Support energy performance disclosure and improvement by their tenants • Upgrade all general lighting systems within tenancies • Use green leases to enable collaboration with tenants • Maximise on-site and off-site renewable energy supply options <p>Waste</p> <ul style="list-style-type: none"> • Provide source-separated waste management services for recyclable materials, including organic waste where appropriate • Use industry best practice to manage and report on waste generation in offices via the NABERS Waste tool to improve industry insights and identify new opportunities for resource recovery • Work with product and service contractors to implement innovative ideas to minimise waste generation on site and to encourage the re-use and replacement of non-recyclable materials with re-usable or recyclable materials • Seek non-landfill solutions when establishing waste contracts <p>Water</p> <ul style="list-style-type: none"> • Undertake and disclose NABERS Water whole building ratings • Install sub-meters to detect and rectify leaks and drive water-efficient behaviour in tenants • Optimise cooling tower water efficiency • Regularly check for leaks and upgrade water fixtures to improve efficiency • Investigate recycled water supply to cooling towers and other non-potable water consumption and connect when access becomes available <p>Transport</p> <ul style="list-style-type: none"> • Provide ample bike parking and end-of-trip facilities 	<p>Energy and emissions</p> <ul style="list-style-type: none"> • Rate and disclose environmental performance • Upgrade to energy-efficient lighting and appliances • Maximise renewable energy options • Demand high-performing buildings • Engage with building owners on base building performance improvements, including owner-provided general lighting systems in the tenancy • Collaborate on whole-building performance <p>Waste</p> <ul style="list-style-type: none"> • Request better waste services and reporting from owners • Engage staff to recycle correctly • Introduce print on demand software to reduce paper wastage <p>Water</p> <ul style="list-style-type: none"> • Assess water efficiency and contract management to upgrade water fixtures and install sub-meters <p>Transport</p> <ul style="list-style-type: none"> • Encourage cycling, walking and public transport <p>Building managers</p> <ul style="list-style-type: none"> • Implement environmental upgrades • Measure and present the savings to owners and tenants • Develop business cases for major upgrades • Preference the replacement of end of life equipment with the highest efficiency option rather than like for like – considering the life cycle costs and benefits rather than simple cash up front

City support

- Advocate for regulatory reform to facilitate increased investment in, and use of, renewable energy
- Advocate for increased minimum environmental performance standards in building codes, equipment and appliances
- Provide support for whole-building data disclosure and NABERS Energy Ratings
- Continue to deliver the CitySwitch Green Office Sydney program to office-based businesses
- Continue to deliver the Better Buildings Partnership program for leading property owners in the local government area
- Support environmental innovation through the provision of grants and the sharing of success and knowledge
- Encourage private owners to take action with information, disclosure and campaigns
- Promote green leasing to enable upgrade activity
- Support the cost effective uptake of renewable energy with information and campaigns
- Encourage the design, construction and operation of net zero office buildings, both new and existing
- Deliver a tune-up program to support privately-owned buildings to make environmental performance upgrades
- Encourage and support buildings to connect to recycled water

City support continued...

- Provide guidelines to assist the business community with operational and contract waste management templates to achieve improved sustainability outcomes and value for money
- Support improved commercial waste data collection and verification
- Educate the business community about available non-landfill, alternative waste treatment solutions for operational waste management
- Continue to deliver the Liveable Green Network, providing connected walking routes across the city
- Advocate for and develop an integrated bike lane network and distribute cycling and walking maps

Developers

- Design and construct new buildings to the highest level of sustainability performance available
- Utilise the highest available NABERS Energy Commitment Agreement
- Comply with the City of Sydney's Waste Management Local Approvals Policy and Guidelines for Waste Management in New Developments
- Include dual plumbing in planning proposals where there are opportunities to connect to a recycled water scheme
- Ensure highest available Water Efficiency Labelling Standard (WELS) for taps, toilets and urinals, and dishwashers.
- Minimise water wastage from fire protection systems testing
- Provide bike parking and facilities
- Minimise general car parking and provide car share vehicle spaces and dedicated charging stations for electric vehicles where possible and appropriate

City support

- Advocate for increases to the National Construction Code (NCC) minimum environmental performance standards for building and refurbishments, and increased compliance with the NCC
- Continue to promote the Section J compliance checklist through industry partners
- Advocate for regulatory reform to facilitate increased investment in and use of renewable energy
- Investigate the inclusion of planning control provisions that introduce NABERS Energy Commitment Agreements for new commercial office buildings and major commercial office refurbishments over 500 sqm or 1000 sqm.
- Promote the use of the updated Guidelines for Waste Management in New Developments
- Develop a pathway for the City's current planning controls to be strengthened over time to deliver net zero building standards
- Encourage the design, construction and operation of net zero buildings, both new and existing
- Encourage and support buildings to connect to recycled water
- Investigate how dual plumbing could be mandated in areas where recycled water is available

Industry actions and City support

Australian and New South Wales government

Australian Government

- Establish a price on carbon and increase the mandatory renewable energy target providing policy certainty to the energy market
- Remove energy market barriers for decentralised energy and affordable off-site renewable energy access
- Implement regular mandatory disclosure of NABERS tenancy and whole-building ratings, as opposed to at the time of sale or lease and investigate the opportunity for retro-commissioning of existing buildings to minimum standards
- Increase minimum standards in the National Construction Code
- Increase Minimum Energy Performance requirements (MEPS) and accelerate uptake of energy efficient appliance standards under the national Greenhouse and Energy Minimum Standards (GEMS) program
- Promote the National Carbon Neutral Offset Standard for Carbon Neutral Buildings
- Develop financial incentives for high environmental performance in buildings

New South Wales government

- Increase the Government Resource Efficiency Policy (GREP) to specify that agencies need to occupy buildings with minimum 5.5 - 6 star NABERS Energy rating and ultimately net zero buildings
- Rate and disclose the energy and water performance of government owned buildings
- Collaborate with industry associations to build capacity and deliver targeted information, resources and training to private owners
- Deliver waste market reform to incentivise resource recovery (avoiding waste, recycling, alternative waste treatment, and transparent waste reporting on volume, weight, composition and diversion from landfill)
- Deliver a recycled water pipeline along George Street between Circular Quay Station and Central Station by 2018
- Fund, and where appropriate deliver, an integrated bicycle network to encourage the further take up of cycling
- Deliver key components of an integrated and safe walking network, including road crossings and links through Government lands and developments

City support

- Advocate for increased minimum environmental performance standards in building codes, equipment and appliances
- Advocate for the Government Resource Efficiency Policy (GREP) to specify that agencies need to occupy buildings with minimum 5.5 - 6 star NABERS Energy rating and ultimately net zero buildings
- Advocate for the mandatory regular disclosure of tenancy ratings and retro-commissioning to above minimum standards, including tax incentives for action
- Provide support for whole-building data disclosure and NABERS Energy Ratings
- Share waste generation data to assist with monitoring recycling performance and identify opportunities for increased resource recovery
- Advocate for water pricing that reflects resource value and promotes innovative water-sensitive solutions including recycled water
- Advocate for regulatory reform to facilitate increased investment in, and use of, renewable energy

02 Our vision for Sydney's sustainable offices

Efficient buildings running on renewable energy will be in high demand across all parts of the office sector

The City of Sydney will continue to lead, advocate and support our businesses to take action. But without strong state and federal policies, the vision of a sustainable Sydney will not be achieved. This plan encourages everyone in the office sector to act and collaborate to achieve even greater business and community benefit for all.

This plan targets the following outcomes by 2030

- Mainstream demand for net zero office space and buildings
- Owners and tenants from all office segments are leveraging targeted resources, support and incentives and are taking action
- Continuous improvement of environmental performance in existing buildings
- A supportive policy and regulatory environment
- New developments are designed and constructed to the highest level of sustainability performance available
- Significant increase in renewable energy demand and supply leading to 50 per cent renewable electricity consumption
- Property owners and office-based businesses are demonstrating process and technology leadership
- Improved waste management, monitoring, reporting and verification leading to 90 per cent resource recovery
- Improved water efficiency and access to recycled water for non-potable water use.

03 Net zero emissions

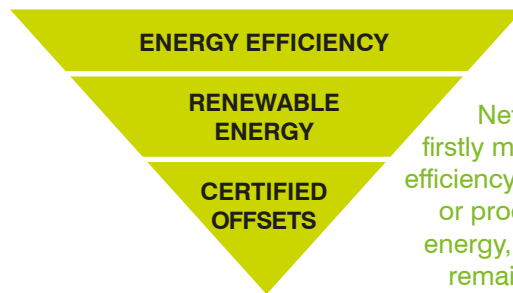
Buildings represent the greatest opportunity for reducing greenhouse gas emissions in Sydney

Net zero emissions buildings are run on renewable energy and offset any remaining emissions. They maximise resource efficiency and ideally take into account building envelope⁹. They use passive design, which maximises the use of natural light, heating and cooling through building orientation, windows, glazing and natural ventilation to reduce the need for additional cooling or heating.

For example, a western façade that receives the strongest sun at the hottest part of the day could be designed to reduce the need for energy for cooling and in turn reduce water consumption. Water efficiency reduces the energy needed for pumping water.

New buildings will need to be designed with passive design, the highest available efficiency, and building management systems for maximising environmental performance in operations. Existing buildings will need deep retrofits: from lighting to chillers and building envelope upgrades. Both new and existing buildings will require access to on-site and off-site renewable energy.

Net zero building actions



Net zero buildings firstly maximise energy efficiency, then generate or procure renewable energy, then offset any remaining emissions

In 2017, the federal government developed a National Carbon Offset Standard for carbon neutral buildings⁹. The standard provides an opportunity for carbon neutral certification of either base buildings or whole buildings. The whole building certification will require building owners to collaborate with tenants to meet the requirements of certification. Tenants generally use about 40-50 per cent of the energy required for the whole building. The use of the whole building standard is an important part of moving industry towards net zero buildings and the City encourages the adoption of this standard. The City also recognises that the achievement of this for all buildings is currently challenging and is committed to supporting industry to overcome these challenges.

Businesses that occupy net zero buildings will be able to report to staff and customers that their building has little or no environmental impact during operation. Occupants will be more comfortable with better indoor air quality, levels of productivity, and health and wellbeing¹⁰.

⁹ [National Carbon Offset Standard for Buildings, Australian Government Department of the Environment and Energy](#)

¹⁰ [Health, Wellbeing & Productivity in Offices – The next chapter for green building, WGBC](#)



King George V recreation Centre, The Rocks, May 2014 / City of Sydney

There are already many local and international examples of net-positive and net zero buildings found in cities from Sydney to New York City. The City of Vancouver has recently approved its Zero Emissions Building Plan and Singapore's Building Construction Authority is aiming for positive-energy low-rise, zero-energy medium-rise, and super low-energy high-rise buildings.

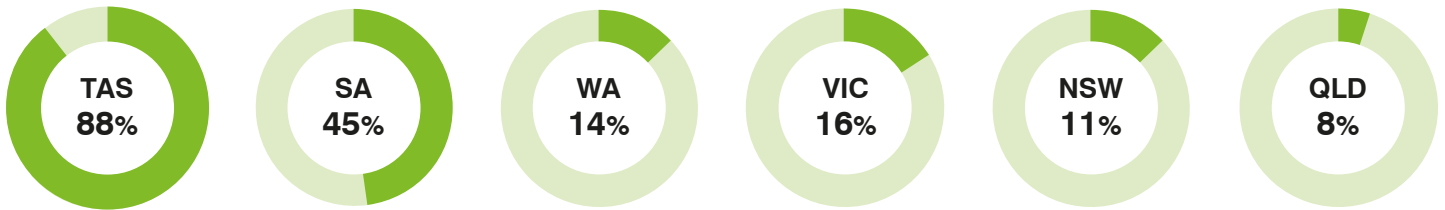
In Australia, realisation of net zero buildings at scale will require collaboration across all three levels of government. The City looks forward to more action by the Australian Government on renewable energy supply and implementation of its National Energy Productivity Plan; as well as collaborating with the New South Wales Government on its target to achieve net zero emissions by 2050.

Policies to incentivise and accelerate action are needed at the national level. Delaying the implementation of opportunities could cost the country \$24 billion over five years.¹¹

¹¹ Low Carbon High Performance – How buildings can make a major contribution to Australia's emissions and productivity goals, ASBEC, 2016

04 Renewable energy

Renewable Energy Penetration – state by state in 2017¹²



Net zero emissions will require large scale renewable energy commitments from the office sector

Australia's coal-fired electricity has high carbon emissions – a major contributor to climate change. Renewable energy, such as solar power, produces no emissions and the price is decreasing relative to coal-fired power. NSW's current renewable electricity supply is 11 per cent and Australia's supply is 17 per cent¹². The federal government's 2020 Renewable Energy Target (RET) provides incentives for 23-24 per cent renewable energy.

This plan indicates that the office sector can reduce its 2006-level emissions by 46 per cent by 2030 through efficiency and the voluntary uptake of renewables.

The remaining 24 per cent reduction to get to the net zero target will need to be made up from offsets, a material increase in voluntary renewables purchasing and/or the greening of the grid supplied energy.

The City of Sydney is working with the Council of Capital City Lord Mayors and industry bodies to advocate for changes to state and federal policy that would accelerate the adoption of clean energy. This includes national electricity market rule changes that would unlock the potential for locally generated energy to be more appropriately priced by the market¹³.

GreenPower purchase and other procurement models including corporate power purchase agreements offer possible solutions to assist organisations to manage climate risk exposure and mitigate against electricity market price volatility¹⁴.

Analysis by sector stakeholders has found that a NABERS Energy five star rated building using green power is cheaper to run than a four star rated building using black power¹⁵.

¹² Clean Energy Australia Report 2018

¹³ City of Sydney Rule Change Submission to AEMC

¹⁴ Energetics – [The Outlook for Energy and Carbon Management, Energetics, 2017](#)

¹⁵ Bruce Precious, National Manager, Sustainability & Property Services, The GPT Group

05 About the office sector

All players in the office sector have a role in creating a market that values efficiency and productivity

Businesses are playing a key role in the transition to a global low-carbon economy and they have a particular role in relation to the office buildings that they own, lease and occupy. The City has been actively working for over ten years with owners and tenants of office buildings who are taking the lead on sustainability.

There are currently around 800 buildings within the City of Sydney for which the primary purpose is office activities, meaning that at least 50 per cent of the net lettable area (NLA) is for office purposes. These offices comprised almost 12 million square metres in 2015/16, with 7.8 million square metres being net lettable area. Almost 5 million square metres of that space is located within Sydney's central business district. By 2030, the total office floor area is expected to grow to around 9.6 million square metres of NLA.

This plan segments buildings by ownership groups. Implementation pathways for improved environmental performance differ greatly depending upon the type of entity that owns a particular building. Each of the following ownership groups has different challenges and opportunities.

- Institutional owners: Real estate investment trusts
- Property groups: Trusts that hold diverse portfolios of buildings
- Private owners: Private individuals and family trusts
- Owner occupiers: Usually government organisations or medium sized businesses.

Most buildings contain a mix of large, medium and small tenants who can play two important roles: managing their own environmental performance within their tenancy; and creating market demand for landlords to improve the performance of the buildings that they occupy.

In 2015/16, the office sector in the City of Sydney was responsible for an estimated 1.8 million tonnes of greenhouse gas emissions, over 45 per cent of the city's total emissions.

Breaking down these emissions across different ownership types shows the substantial impact of the many and diverse buildings that are privately owned. Privately owned buildings and their occupants have the greatest impact at 44 per cent of the sector's emissions. Arguably this group of buildings represents the greatest opportunity for energy efficiency gains. The institutional owners, after achieving significant emissions reductions to date through energy efficiency upgrades, are responsible for 39 per cent and have the most capacity to innovate, test and de-risk new energy efficiency technologies, and to secure renewable energy supply to demonstrate pathways to net zero emissions. Property groups and owner occupiers contribute 8 per cent and 9 per cent respectively and will have varying levels of opportunity and capacity.



Institutional owners¹⁶

Large premium grade buildings with building management and a dedicated sustainability resource; premium corporate tenants. Less energy intensive building with efficient base building equipment and lighting.

Share of net lettable area¹⁷

39%

Share of sector emissions

41%

Property groups

Diverse, typically smaller more energy intensive buildings, corporate and government tenants. Some sustainability and building management resources.

Share of net lettable area

9%

Share of sector emissions

8%

Owner occupiers

Variable levels of building and sustainability management, few buildings with NABERS ratings. 50% government owned.

Share of net lettable area

8%

Share of sector emissions

8%

Private owners

Older, smaller and lower grade buildings, without dedicated building management. Inefficient lighting, equipment and controls, SME tenants. No sustainability resource.

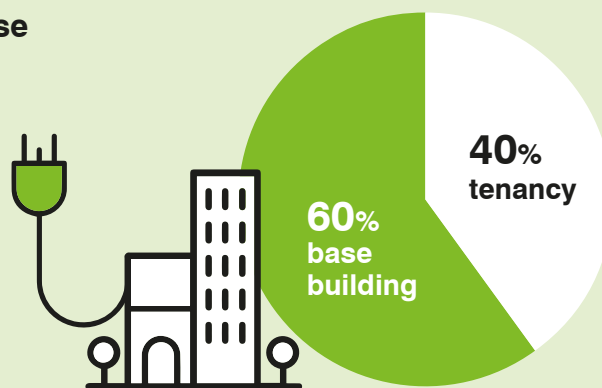
Share of net lettable area

44%

Share of sector emissions

43%

Office building energy use



¹⁶ Interim (2022) and 2030 Abatement Potentials: Final Report, Strategy. PolicyResearch., 2017

¹⁷ The figures for NLA and emissions are estimated, based on 2012 floorspace data and 2014/15 emissions.

Note: the above percentages are estimates only, based on City of Sydney analysis of available data on building ownership.



Photographer: Richard Glover / City of Sydney

The Commercial Building Energy Efficiency Disclosure scheme was introduced in 2010, requiring mandatory reporting of energy performance (using the NABERS rating tool) of base buildings when spaces of 2000 sqm or more are sold or leased. As of July 2017, this requirement applies to the sale or lease of spaces of 1000 sqm or above. Currently, 211 office buildings in the City of Sydney have accredited NABERS ratings, 54 have a Green Star rating (Design, As Built or Interiors) and 133 offices¹⁸ are voluntarily participating in the CitySwitch program.

But current policies and voluntary programs for improving sustainability are motivating only a small segment of the office sector; in 2015/16 there were only 70 NABERS Office Energy for tenancy ratings undertaken in NSW.¹⁹

Given the efficiency gains made by the leaders, the greatest opportunity for energy efficiency now lies in privately owned buildings and with tenants in all buildings. All office market segments can make even further emissions reductions with renewable energy options.

4.1 Institutional owners

Institutional landlords own around 39 per cent of the city's office space – which tends to be large premium and A-grade buildings with building management and a dedicated sustainability resource. These landlords are mostly real estate investment trusts whose investors require strong governance and transparency. Due to the need to attract global investment flows with expectations of corporate social responsibility and accountability, some owners are global leaders in sustainability, ranking highly on global investor indices like the Global Real Estate Sustainability Benchmark (GRESB) and the Dow Jones Sustainability Index (DJSI).

¹⁸ Green Report June – December 2016, City of Sydney

¹⁹ NABERS Annual report 2015-16

Since 2011, the City of Sydney has worked with the leading landlords of commercial property, forming the Better Buildings Partnership (BBP), to improve the environmental performance of Sydney's top-tier institutionally and publicly owned commercial buildings and to engage and transfer knowledge to property groups in the broader building and property sector. The BBP had 12 reporting portfolios in 2016/17, covering almost 2.7 million square metres of space within 101 office buildings, which is over half of the office space located in the central city (or about 30 per cent of the office space across the entire local government area).

In 2016/17, BPP members collectively reduced their emissions by 52 per cent from their 2006 baseline and saved \$33 million p.a. in avoided electricity costs whilst increasing their floor space by 10 per cent since 2006. As BBP members maximise base building efficiency, other than upgrading major equipment that is not at the end of its life, the move to renewable energy is their natural next step towards net zero offices.

This sub-sector frequently sets new benchmarks for sustainable buildings, such as Lendlease's Barangaroo South development, which aims to be the first climate-positive and water-positive precinct in the world by using locally generated and off-site renewable energy.

Other leading property owners are also making public commitments: Mirvac, Investa, and AMP's Wholesale Office Property Fund have committed to achieving net zero emissions.



Eureka Funds Engagement, CitySwitch Green Office signatory, April 2015. Photographer: Jamie Williams, City of Sydney

4.2 Property groups

Property groups are generally trusts that hold more diverse portfolios of buildings. Property groups currently own around 9 per cent of the total office space in the local government area.

Property groups typically own smaller buildings than institutionally owned buildings which are, on average, more energy intensive B and C grade assets²⁰. There is, however, a wide spread of both low- and high-performing buildings.

Similar to institutional owners, property groups generally have good capacity for assessing and investing in improving building performance. But fewer have comprehensive sustainability strategies and transparent reporting, and they have fewer listings on sustainability indices like GRESB and DJSI.

4.3 Tenants – or office-based business

Office based businesses have much to gain from managing their environmental impact. These benefits include reduced costs on electricity and rental outgoings, better managed carbon risk and exposure²¹, corporate reputational benefits with customers, staff and investors, and improved productivity and well-being for staff.

Office space with high NABERS and/or Green Star ratings, good amenity and facilities for health and wellbeing helps attract and retain talented employees and can lead to substantial productivity improvements whose bottom line benefits overshadow savings from direct electricity costs²².

Office based businesses have two clear roles in this sector strategy; to optimise their own business' environmental performance within their tenancy space and to drive demand for high performing office buildings from their landlord.

Tenant demand and collaboration with owners is key to unlocking net zero workplaces. But tenant engagement with landlords on environmental performance varies within each building.

Institutionally owned buildings tend to offer premium office space, attracting business tenants that demand, and can afford, superior facilities and high-performance office space. The large floor plates of premium buildings are more likely to be occupied by large companies with global branding and/or corporate social responsibility policies. These large organisations are more likely to employ a tenant representative to negotiate their ongoing needs as building occupants. They are more likely to receive information and feedback from building owners on the performance of their buildings and subsequent opportunities to improve it.

Tenants in buildings with strong base building performance still need to address energy and resource consumption within their own tenancies.

Larger businesses are slightly more likely to conduct their own NABERS Office Energy for tenancies ratings, although there is substantial opportunity to increase this across the board.

For over 12 years, CitySwitch Green Office has fostered collaboration and leadership among a growing network of large and small businesses across Australia. These office-based tenants have improved their performance by an average of 26 per cent through participating in a program that offers them resources, support and recognition of achievement.

²⁰ As defined by the Property Council of Australia Guide to Office Building Quality, 2012

²¹ Australian Institute of Company Directors, 2016

²² Why choose a high performing building. City Switch



Photographer: Richard Glover / City of Sydney

4.4 Private owners

Private individuals and family trusts own around 44 per cent of office space in the City of Sydney.

This ownership group is often referred to by industry as ‘mid-tier’, which describes office buildings other than Premium and A-Grade assets as defined by the Property Council of Australia. This plan focuses on private owners of what are generally the ‘mid-tier’ building type to better understand this diverse group, ranging from high net worth individuals to average-income “mum and dad” investors. Property ownership is often not the core business for this group, meaning that there is less active asset management and different decision-making structures across a diverse set of buildings.

Many studies and pilot projects have shown it is challenging to gain access to these owners because there are so many, and few have the time or resources to dedicate to upgrading their buildings. Nor do they have shareholders or tenants who demand better performance and transparency.

Collectively, private individuals own a larger share of the City’s office floor space than institutional owners. These buildings tend to be older, smaller and lower grade, operating without dedicated building management. The buildings tend to have higher vacancy rates and shorter lease terms. Many of them have inefficient lighting and building management controls that are out of date. Buildings over 20 years old will often have major equipment such as chillers that are nearing the end of their operational life.²³

The results and benefits of upgrading buildings have been clear in institutionally owned buildings. But this is not filtering down to the private individual owners. Voluntary sustainability programs in both New South Wales and Victoria have proven the opportunities are abundant but are not being realised by these owners, probably due to the diversity and varying capability level of building owners and managers.²⁴ Without mandatory levers to upgrade buildings these owners stand to miss out on cost savings, investment opportunity, increased asset value, improved tenant retention and rental return.

In 2014, the City conducted a survey of tenants in privately owned buildings to identify their needs, barriers and motivations in relation to sustainability²⁵. While these businesses reported caring about the environment, they do not act unless there is no cost or little effort involved. Their priority is a low-cost office space; they are not engaging owners on efficiency upgrades as it is perceived that this will result in higher rent. Instead, these businesses choose to focus on day-to-day business.

²³ Mid-Tier Commercial Office Buildings in Australia: A national pathway to improving energy productivity, Green Building Council of Australia, 2015

²⁴ Energy Efficient Office Buildings – Transforming the mid-tier sector, Sustainability Victoria, 2016

²⁵ Mid-tier tenant engagement survey, City of Sydney, 2014



Image courtesy of Stockland

4.5 Owner-occupiers

Owner-occupiers hold about 8 per cent of total office space in the local government area. Government bodies are an important owner-occupier, owning some 43 per cent of this office space.

In theory, owner-occupiers have the strongest incentives for resource efficiency due to the absence of a split incentive between tenant and landlord. In practice, however, there is very little data on the resource efficiency of owner-occupied buildings. Very few are rated under programs like NABERS, perhaps because they are less likely to be sold or leased and therefore are not required under the Commercial Building Disclosure Program to disclose energy performance.

Compared to more professionally managed buildings, owner-occupiers may have less internal expertise in sustainability and energy management. And any priority placed on environmental upgrades will largely be driven by the internal policies of the owners, not tenants, building managers or clients.

4.6 Building managers, contractors and intermediaries

Property and facility managers, on-site building managers, equipment and maintenance contractors, accountants, procurement managers and lawyers play an important role in improving the environmental performance of buildings²⁶. A well managed building can increase up to 1.3 NABERS energy stars through good building management²⁷.

Building managers and contractors are often the intermediary between owners and tenants and provide technical knowledge to manage, maintain and upgrade buildings. The inclusion of environmental performance management obligations in their duties and their level of expertise varies.

Professional management firms are often contracted by institutional owners and property groups to proactively identify and implement no-cost and low-cost opportunities, optimise key equipment and systems and develop asset management plans, presenting business cases and reporting results to owners.

Private owners may specify that building services provide a low-cost service to maintain the building, leaving little capacity to act on environmental performance opportunities. Many owners may not contract dedicated building or facilities management at all; contractors simply maintain key equipment and respond to tenants' complaints.

Accountants and lawyers also influence key decisions on lease agreements, building management and capital spend. There are economic opportunities in upskilling managers, contractors and intermediaries enabling them to identify and mitigate risk, access capital and upgrade the assets that they manage.

²⁶ Building Retrofit Toolkit Scoping Study Final Report, Energy Efficiency Council & Property Council of Australia

²⁷ Warren Centre, 2009

06 Challenges

Strong policy measures are needed to overcome barriers to investment in environmental performance

The City is committed to leading Sydney's ambitious but achievable and necessary goal of net zero by 2050. But we can't do it alone. To develop this plan, the City spoke to the owners, managers and tenants of office buildings about environmental performance opportunities, the barriers and benefits of action, and what would help them act on these opportunities.

Overwhelmingly, they pointed to the need for strong policies that address barriers to investment in environmental performance. These barriers include: unpriced carbon emissions, the centralised energy supply, unengaged owners and tenants, split incentives between building owners and tenants, and, in many cases, limited information, management decision-making time and access to investment capital.

5.1 Policy and regulation

Policies such as carbon taxes and emission trading schemes have been successful in Australia, other countries and other cities²⁸. However, the Australian Government repealed the carbon tax and continues to debate the mandatory renewable energy target. Investors want policy certainty on how markets will operate over the long term.

Energy market reform and increased minimum performance standards are crucial, overdue and the most cost-effective way to improve energy productivity, maximise efficiency and progress to net zero emissions.

The City works with other progressive organisations to promote an updated National Electricity Objective. Climate change should be added to existing considerations like total system cost and security of supply.

Allowing buildings to share power and accessing off-site renewable energy is particularly important to the institutional and property group owners to maximise efficiency and progress to net zero emissions.

While energy efficiency incentives and current mandatory disclosure requirements under the Commercial Building Disclosure (CBD) Program have reduced emissions in the office sector, this is not sufficient to secure the City's environmental targets, the community benefits of Sustainable Sydney 2030, or the Paris agreement.

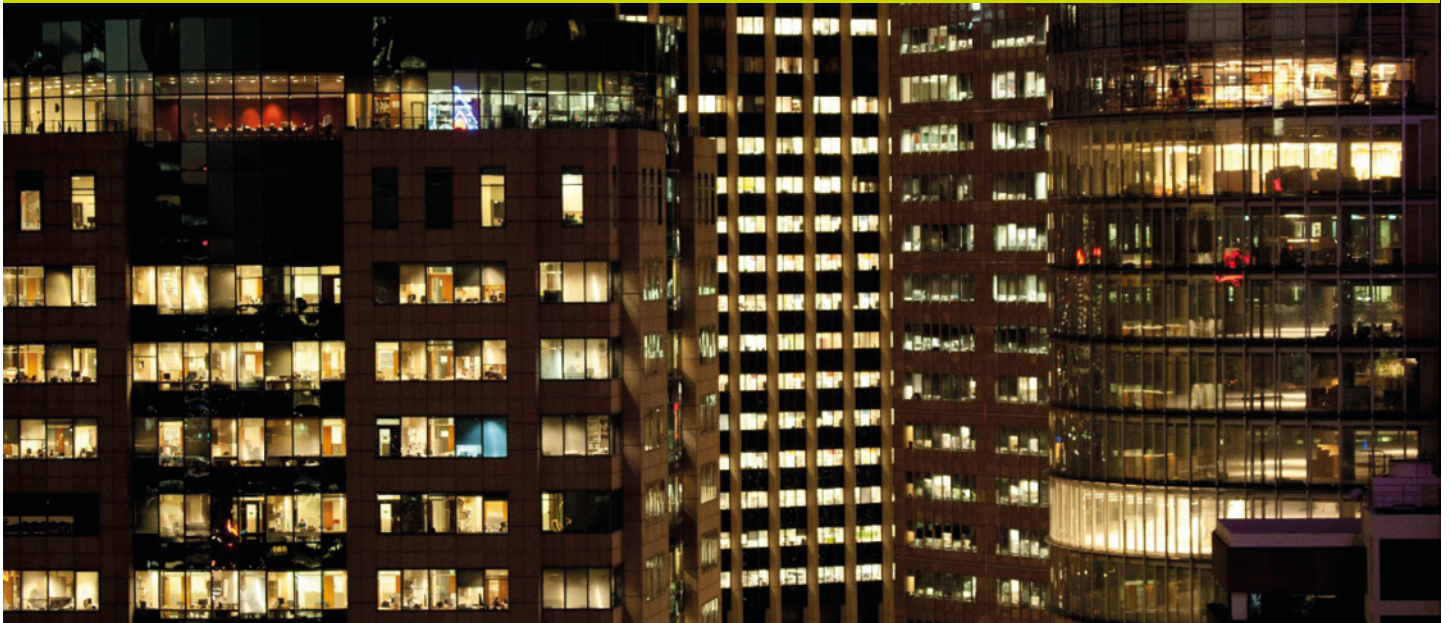
Mandatory disclosure of base building energy performance on sale or lease improves performance. However, privately owned buildings are sold less often, leased by less discerning and empowered tenants, and owned and managed by individuals with less skills and capacity to act on energy performance. Even with the reduced disclosure threshold of 1000 square metres, many will not be required to report in the next five years.

Sustainability Victoria has identified that private owners are responsive when replacing end-of-life equipment or broken assets. But replacements are often unplanned and therefore tend to be 'like for like' rather than upgraded to higher efficiency equipment, because energy consumption and maintenance savings were not considered.²⁹

Regular mandatory reporting by all building owners and tenants would ensure that energy performance was regularly reviewed and enable a more planned response to end-of-life equipment replacement.

²⁸ Alternative building emission-reduction measure: outcomes from the Tokyo Cap-and-Trade Program

²⁹ Energy Efficient Office Buildings – Transforming the mid-tier sector, Sustainability Victoria, 2016



Photographer: Jamie Williams / City of Sydney

5.2 The limits of voluntary action

The current demand for environmental performance in buildings is voluntary. Driven by corporate social responsibility and sustainability policies and targets, corporate tenants are choosing high performing buildings to attract employee talent and support productive staff. Energy performance has benefits of comfort, health and wellbeing, translating to higher productivity and lower absenteeism.³⁰

Corporate tenants tend to publicly report the environmental rating of the base building they occupy but much less so the rating of their own tenancy space. Stakeholder consultation indicated many rely on building owners to act on sustainability. Base building NABERS ratings are being used in corporate reporting without the corporation taking the initiative of rating their own tenancy.

While some tenants, particularly in premium institutionally owned buildings, are aware of these benefits, many perceive that as tenants they have little control or influence over energy costs and environmental performance. Many tenants are not aware of the environmental performance of their office space, the benefits they may be missing out on, and that they can rate and improve tenant performance.

In terms of moving to net zero emissions, the institutional and property group owners are concerned about the lack of engagement of tenants and access to renewables. The Better Buildings Partnership has committed to achieve the City's vision and environmental targets. To achieve this and keep up with international best practice, owners and tenants must work together to maximise whole-building efficiency and secure renewable energy.

Tenants of low-grade buildings prioritise affordable office space close to clients and suppliers. They generally do not query building performance in lease agreements, nor question owners when hit with high energy bills. Owners of these buildings prioritise low maintenance costs and overheads. Generally, the relationship between owners and tenants is managed by contractors who manage multiple buildings and are time-poor.

5.3 Energy data for whole building performance

To maximise whole-building efficiency and benefits from cost savings to comfort levels, it's important to understand not just the energy used by base building plant and equipment but also the energy used in the tenanted spaces.

The Commercial Building Disclosure Program has provided much-needed understanding of base building performance and improvement. There is, however, very limited information on the performance of tenanted office space, given that the scheme specifies it is the obligation of the owner to disclose base building performance and the efficiency of tenant lighting systems only at the point of sale or lease.

To inform this plan, NABERS and CitySwitch data was aggregated to indicate whole-building performance across the ownership profiles. While insufficient data was available to establish energy intensities by subsector, analysis showed that the estimated energy intensities are higher than previously understood, and only marginally lower in institutionally-owned buildings.

³⁰ The Benefits of Benchmarking Building Performance, IMT 2015



Photographer: Jamie Williams / City of Sydney

In New South Wales, owners cannot easily access tenant energy data to measure and manage whole-building performance. Solving this problem is key to effective collaboration. Typically, whole-building energy use is split about 60:40, where 60 per cent is attributed to the base building of which its energy use is owner-controlled and 40 per cent is attributed as the share of tenants.

However, if the energy consumed by the tenant lighting systems that are owned by the building owner is attributed to the building owner then the energy use split may be 70:30 or higher.

In 2017 a NABERS Co-assess tool pilot explored methods for base building and tenancy data to be collected together, but to provide back separate ratings for each participating party. This streamlined method of data collection will enable building owners to offer tenant ratings as a value add service which could result in substantially more disclosed ratings and improved collaboration on the subsequent findings.

Better data disclosure and sharing between parties is important to identify, incentivise and target tailored support to buildings, foster collaboration and accelerate the implementation of upgrades³¹. Green leases provide an industry recognised mechanism to support these outcomes, whilst protecting the needs of individual parties³².

5.4 Incentives for high-performance buildings

The BBP have upgraded their buildings to maximise base building efficiency, achieving a 52 per cent reduction in emissions since 2006. Sustainability Victoria's Energy Efficiency Office buildings program identified no-cost and low-cost efficiency upgrades resulting in an average savings of 29 per cent in energy costs for privately owned buildings.³³

Unlocking no-cost and low-cost upgrades in these buildings would secure:

- Lower energy bills and better comfort for tenants
- Reduced tenant complaints and contractor call-out fees
- Improved performance, better asset value and tenant retention.

But there is little incentive for owners and tenants to collaborate to maximise mutual benefit. This is important in all ownership categories, except perhaps the owner-occupiers.

Lighting upgrades are proven and cost effective. The Commercial Building Disclosure (CBD) Program regards 7 watts per square meter as best practice, but technology is already improving that benchmark. The industry must overcome the split incentive to prioritise lighting efficiency as the highest impact, lowest cost upgrade. Owners can support tenants to upgrade lighting to best practice as defined under the CBD Program.

31 NABERS annual report, 2016

32 BBP Leasing Standard

33 Energy Efficient Office Buildings – Transforming the mid-tier sector, Sustainability Victoria, 2016



WWF Australia, CitySwitch Green Office signatory. Photographer: Ute Wegmann Photography

Further emissions reductions often require investment in larger capital upgrade projects such as replacing chillers, on-site renewables or retrofits to the building envelope. Engaging tenants on whole-building performance has also proven to be resource-intensive.

Privately owned older buildings have old chillers with refrigerants that are being phased out. These upgrades afford long-term savings but need greater capital investment than lighting and heating, ventilation and air conditioning optimisation. However, investing in energy efficiency is not perceived to yield a return, and is seen as potentially disrupting tenants during upgrades.

Financial incentives are important to accelerate investment in major upgrades in all office subsectors. The NSW Energy Savings Scheme and introduction of climate bonds provide assistance in reducing project investment costs.

Additional incentives for institutional and property groups should focus on innovation, securing renewable energy and working towards net zero emissions, whereas incentives for private owners should focus on incentivising high-efficiency upgrades over 'like for like' replacements.

5.5 Demand for high-performing, net zero office space

Owners reported a willingness to invest if there was greater demand for net zero emission buildings. In the past, federal and NSW state policies have preferred occupation in buildings with high NABERS ratings, and this increased demand was met by the market. Government and business procurement policies could be used to catalyse base building upgrades and improved design standards. The Government Resource Efficiency Policy sets the minimum requirement for government office space at 4.5 stars. The City has started to investigate the inclusion of minimum environmental performance in the Development Control Plan.

Making information on utility bills and indoor environmental quality available at point of sale or lease is important for informed consumer choice. Base building performance ratings are mandated to be disclosed on sale or lease, not tenancy ratings. While a well-performing base building can improve tenancy performance, this does not secure efficient productive tenant space.

To achieve net zero emissions buildings, tenants need to rate their office space, improve their ratings, secure and promote the benefits of environmental performance in buildings, buy GreenPower and allowable offsets, and collaborate with fellow tenants and the building owners.



Business waste recycling at Liberty Place. February 2017 / Photographer: Jamie Williams

5.6 Low resource recovery from office waste stream

The office sector generates around 135,000 tonnes of waste a year, or 20 per cent of the city's total commercial waste.

Office tenancies nominally recycle just less than 50 per cent by weight, but contamination of recycling streams can be high and the amount subsequently rejected at the waste recycling facility is unknown.

While procurement of services for recycling for paper and plastic is common in offices, the separate collection of food waste is less common. Food waste, which can be up to 30 per cent of the non-recycled waste stream, can be recovered for energy and to be made into a high-quality fertiliser.

Significant opportunities exist to improve resource recovery through improved material collection systems and data consistency. Collaboration with other tenants, building managers and owners is key to success within the building. It will also be key to work with both ends of the supply chain to maximise waste avoidance and improve resource recovery at end of life.

In view of increasing waste volumes and the greenhouse gas impacts caused by waste in landfills, state policy reform is needed to incentivise waste avoidance, recycling and alternative waste treatment and the reporting of waste weight, volume and composition.

5.7 Increasing potable water consumption

In 2015/16, commercial office buildings consumed over 9,900 megalitres of water, or 27 per cent of total city consumption. Annual consumption for the office sector has been steadily increasing over recent years.

While office buildings use relatively less water than residential apartments or visitor accommodation, every drop of water is precious. In view of increasing high heat days and prolonged droughts, it is everyone's obligation to save water wherever possible. Water-efficiency measures are extremely cost-effective, but limited metering and poor feedback mechanisms prevent improvements, such as simple maintenance to detect and rectify leaks and upgrading ageing fixtures to improve efficiency.

Currently, potable water is used for many non-potable purposes in office buildings, such as toilet flushing and air-conditioning cooling towers. Connecting to alternative sources of water for non-potable uses would be beneficial. It would reduce demand on the centralised water supply and could reduce the future need for major water and wastewater network investment to meet increased demand.

07 Opportunities

Solutions like optimising lighting, heating and cooling are cost-effective and available. But without policy measures to support them, they will continue to be ignored by tenants, private owners and owner-occupiers.

Analysis by C40 Cities shows the greatest impact within the buildings sector can be made by establishing data reporting and codes affecting new and existing buildings and driving energy efficiency improvements for existing buildings.³⁴

The City commissioned detailed emissions modelling to understand the most effective technical and policy initiatives to overcome barriers and reduce emissions in City of Sydney office buildings. Ideas and feedback from the owners, managers and workers of office buildings were included. The following initiatives are the most effective opportunities for emissions reductions; all of them provide net economic gains for the city and businesses:

- Increased renewable energy uptake
- Mandatory disclosure of NABERS ratings and use of NABERS Energy Commitment Agreements
- Higher minimum standards for new build and refurbishment work
- New developments committing to net zero and 6 star NABERS agreements.

All measures except off-site renewable energy supply could potentially improve the quality and performance of office buildings. Improvements in heating, ventilation and air conditioning, and quality efficient lighting can positively impact the health and wellbeing of office occupants, which in turn can boost cost savings from upgrades, with further financial gains in employee productivity and lower absenteeism.³⁵

Benefits from improving sustainability in office buildings are:

- Cost savings – no need to maintain inefficient lighting and equipment
- Comfort – efficient buildings deliver comfortable conditions for tenants and reduce complaints while saving energy
- Productivity – better design and comfort makes workers healthier, happier and more productive
- Value – rating and improving building performance can attract and retain tenants, reduce overheads and increase asset value
- Recognition – staff, investors, clients and customers positively recognise efforts.

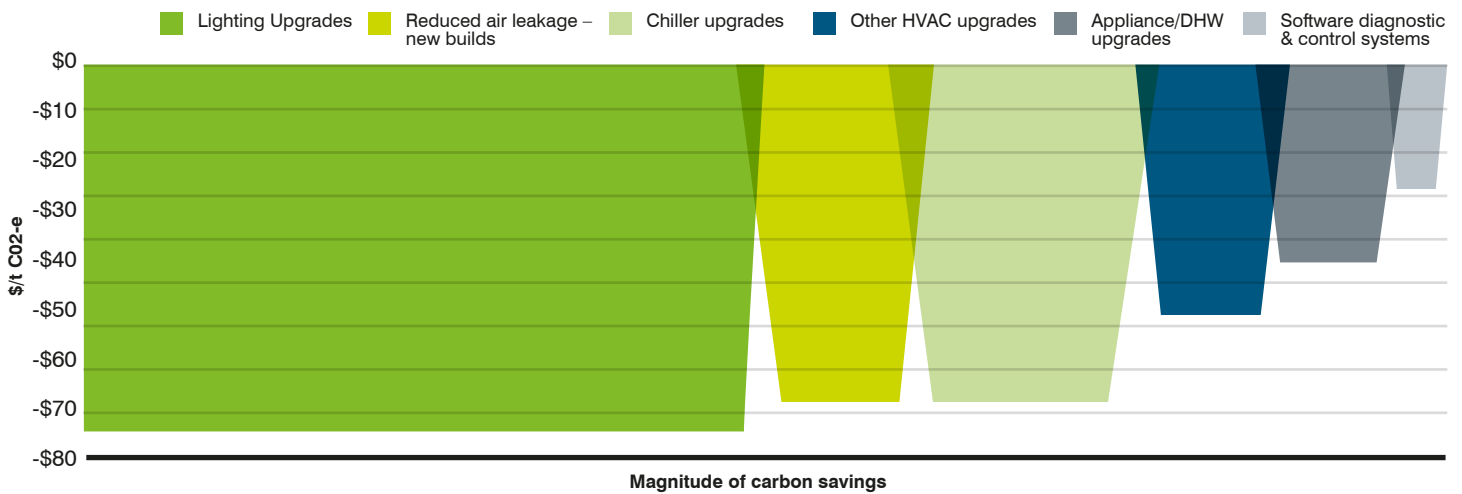
Staff costs are the greatest expense for many office-based businesses. Therefore, productivity gains from improving the comfort and wellbeing of staff are valuable benefits derived alongside upgrading the environmental performance of buildings. This will be increasingly important during prolonged heat waves, when efficient and effective heating and cooling systems will maintain comfort levels for building occupants and reduce the energy load on the grid.

These benefits may not be enough to motivate owners to upgrade their buildings. The City will continue working with industry to advocate for compliance-driven policy and mechanisms to unlock retrofit investment in privately owned buildings.

³⁴ Deadline 2020 – [How cities will get the job done](#), C40 & ARUP, 2016

³⁵ [Health, Wellbeing & Productivity in Offices – The next chapter for green building](#), WGBC

Cost effective upgrades for offices³⁷



Many cities require buildings to undertake periodic auditing and/or retro-commissioning every few years, often mandated along with reporting and benchmarking schemes. Across C40 cities, these mandates are mainly for large commercial buildings; some exclusively focus on building cooling systems and others on whole-building performance, including tenant and base building areas.³⁶

How could similar mandates be applied in Australia? It may involve incremental steps for the office sector to make the transition to net zero emissions by 2050. The first step is the voluntary take up of combined NABERS energy ratings by industry. The City will advocate for the mandatory disclosure of tenancy ratings. This would effectively allow the transition to whole-building ratings to inform the need for minimum requirements and provide better understanding of opportunities for improved performance and improvement.

Requirements for net zero new buildings would follow, and by 2050 all buildings would be operating at net zero emissions.

City governments can also lead by example in their own municipal buildings. Cities often disclose their own building energy performance data, require environmental performance in construction and refurbishments, and test innovative technologies and pilot initiatives in municipal buildings, before demonstrating and promoting outcomes.

6.1 Cost effective upgrades

Research commissioned by the City identifies that many cost effective upgrades are available to the market.³⁷ The chart above identifies the most cost-effective energy efficiency upgrades for offices, all of which provide a positive return on investment. Energy efficiency is now well established and provides a rapid return on investment for all sub-sectors of landlords and tenant. Any economically rational property owner or business could consider a costed plan for tackling these opportunities over time.

Lighting consistently shows as the greatest area of opportunity, but may sometimes lack action due to the split incentive, where the equipment is owned by the building owner, but operated (and paid for via electricity bills) by the tenant.

Given the expertise for property management sits with the owner and their agents, and not with the tenant, this strategy suggests that the landlord assume responsibility for upgrading all general lighting to best practice.

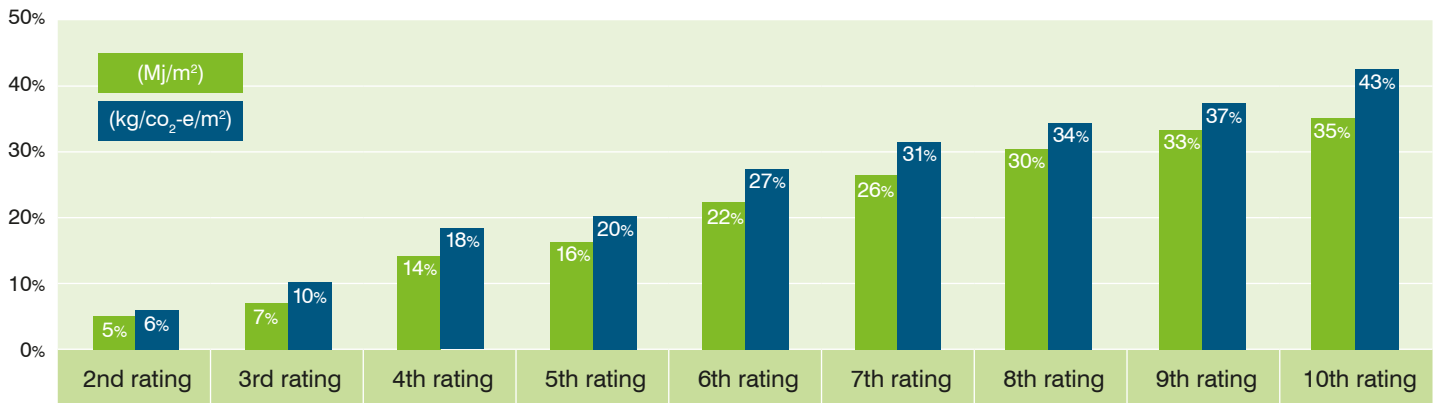
A number of financial mechanisms and schemes including the NSW Energy Savings Scheme (ESS) are available to reduce upfront costs of replacement. There is an opportunity for landlords to come to arrangements with tenants whereby the tenant contributes to the upfront replacement cost in exchange for enjoying the operating costs savings over the longer term.

36 Urban Efficiency – a global survey of buildings energy efficiency policies in cities, C40, 2015

37 Interim (2022) and 2030 Abatement Potentials: Final Report, Strategy. Policy.Research., 2017

Average reduction in energy use after multiple ratings³⁸

NABERS ENERGY FOR OFFICES (Base and Whole Buildings)



6.2 Mandatory disclosure of tenancy or whole-building NABERS energy ratings

Strong evidence suggests that what gets measured gets managed; multiple NABERS Energy ratings are correlated with increased performance of more than 30 per cent.

Most NABERS Energy ratings and improvements have been on base buildings. Analysis of data from the NABERS website shows that only 32 tenancy ratings were undertaken during 2014-15 in the City of Sydney - a tiny proportion of the thousands of office tenancies in the city. Incentives for improving energy efficiency by tenants are weaker. Building owners aiming for very high building performance often struggle to engage tenants.

Mandating the regular disclosure of tenant ratings would trigger tenants to recognise their impact, and their contribution to whole-building energy performance. This may motivate businesses to improve performance, upgrade lighting and appliances, and collaborate on whole-of-building performance.

Tenants could be supported in identifying low-cost upgrades or with information to find better-rated office space to reduce energy costs over the term of the lease.

³⁸ NABERS annual report, 2016, <https://nabers.gov.au/AnnualReport/2015-2016/life-of-program-statistics.html>



International Womens Day Park / Katherine Griffiths

6.3 Market signals, incentives and support for high-performing buildings aiming for net zero emissions

Tenants have the power to influence building energy efficiency with their operational and purchasing decisions. For example, a procurement target set by government leaseholders to occupy net zero emission office space would send an important signal to the market. Although government is not the largest tenant in terms of space in the city, it is a valuable and reliable tenant; building owners would be motivated to upgrade buildings to meet government requirements.

Targeted campaigns to raise awareness of the value and benefit of net zero emission buildings, focusing on whole-building performance and collaboration between tenants and owners are also important to support further emissions reduction.

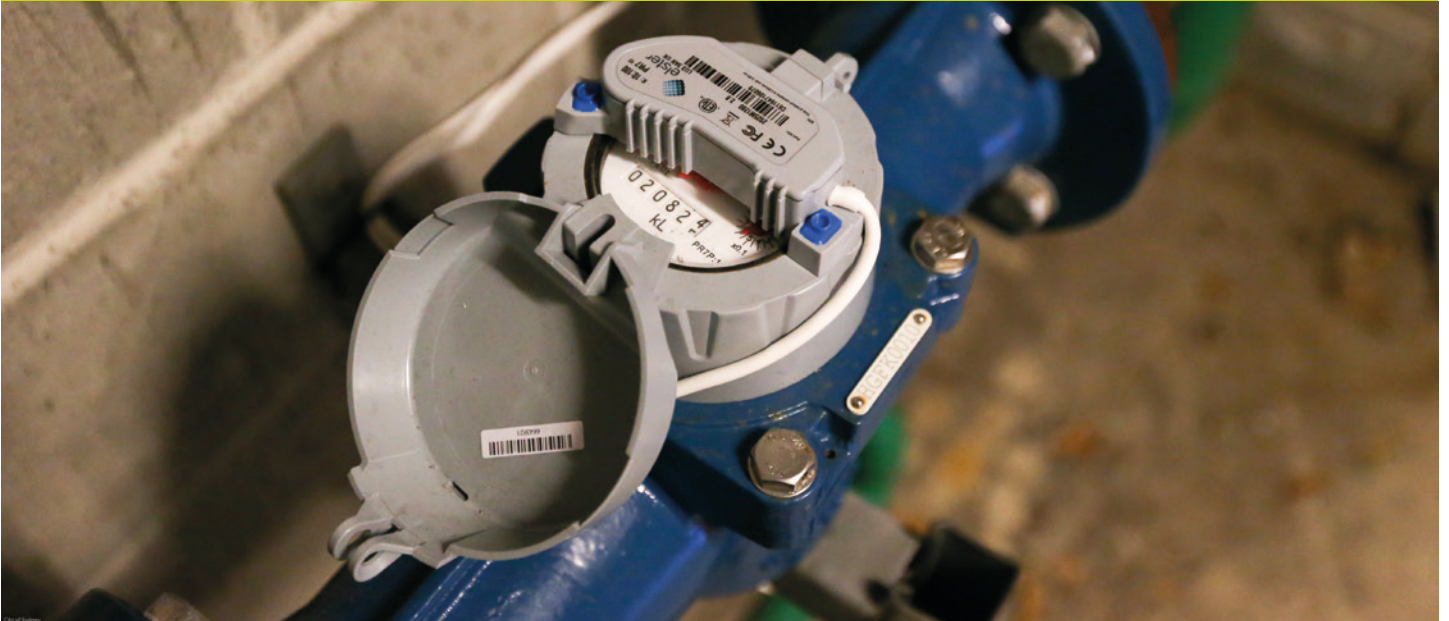
If the National Energy Productivity Plan, the NSW climate change policy framework, market demand and government procurement targets are not enough to motivate emissions reductions, minimum energy performance standards for existing buildings would be justified.

6.4 Improved resource recovery

Building owners and tenants can use their power as customers and consumers to seek out alternative waste solutions, better waste management, and better data and reporting.

CitySwitch has a guide and audit tool for tenants. BBP has produced waste management guidelines that assist owners to procure and manage waste contracts to maximise resource recovery. Office owners and tenants can use the NABERS Waste tool to benchmark their performance.

Building owners can use these tools and guidelines to work with tenants, waste contractors and facilities to encourage meaningful recovery of waste resources.



Water metre/City of Sydney

6.5 Reduced potable water consumption

Building owners can implement water-efficiency measures such as installing smart meters to detect leaks and more efficient fixtures and fittings. This applies to base building equipment such as cooling towers and to office space through collaboration with tenants to maintain water-efficient fixtures.

As part of the CBD and South East Light Rail project, recycled water pipelines are expected to be constructed by the NSW State Government along George Street between Circular Quay Station and Central Station by 2018. It is the City's role to facilitate the delivery of a recycled water scheme that utilises this pipeline. Once a recycled water scheme is developed, buildings close to George Street will be able to access recycled water for all non-potable uses including cooling tower use, toilets, laundry and irrigation.

Initially, existing buildings may choose to connect cooling towers to recycled water, while future buildings or buildings undergoing major refurbishments could connect for all non-potable uses. It is important to ensure that new development is future-proofed through the inclusion of dual plumbing for recycled water where it will be available.

6.6 Off-site renewable energy supply

The energy market is complex, outdated and needs reform to encourage renewable energy investment both in buildings and in supply to the energy grid. Progressive businesses are achieving great results from local and community renewable energy generation projects. However, onsite renewable energy generation is insufficient to reach our city's renewable energy target.

The City is advocating for regulatory changes to the National Electricity Rules to improve financial returns for local generators. The change would have a positive effect on taking up renewable energy generation across Australia in buildings and at the district level.

The City is also exploring opportunities to facilitate renewable energy generation projects outside our city to help achieve the 50 per cent renewable electricity target for the local government area. This type of project would be additional to the amount of renewable energy supplied through the Australian Government's renewable energy target. Opportunities may include aggregated power purchase agreements, encouraging the use of GreenPower, and direct investment in projects.



International Towers, Barangaroo, part of the Climate Positive Precinct. Photo courtesy of Barangaroo Delivery Authority

6.7 Higher minimum standards for new build and refurbishment work

The biggest opportunity for both carbon emission reduction and energy efficiency gains is to increase the minimum standards set in the National Construction Code (NCC) and ensure compliance with these higher standards.

Australia's minimum construction standards for commercial buildings are far behind international best practice.³⁹ The National Construction Code is due to be updated in 2019 – advocacy is needed immediately to ensure that long-term, cost-effective building efficiency and emissions reductions are in line with international best practice standards in both new buildings and major refurbishments.

A study of C40 cities has shown that many cities develop their own codes for new buildings and major renovations that are broader or more stringent than national or state codes.⁴⁰ Recognising the importance of immediate action to avoid locking in new emissions, the City will explore amendments to the Local Environment Plan (LEP) and Development Control Plan (DCP) to secure net zero emission developments.

6.8 New developments delivering net zero and 6 star NABERS agreements

New buildings are not being built to maximum efficiency. This means that further carbon impact and the need to retrofit in the future are locked in. While the majority of environmental impact is in the operation of buildings, the most cost-effective time to secure efficiency is in building design and construction rather than subsequent retrofits.

Analysis undertaken by the City determined that significant emissions savings can be achieved through use of 5.5 star NABERS Energy Commitment Agreements for new commercial office buildings. The City will investigate the inclusion of planning control provisions that introduce NABERS Energy Commitment Agreements for new commercial office buildings or major refurbishments over 500 sqm or 1000 sqm.

³⁹ Low Carbon High Performance – How buildings can make a major contribution to Australia's emissions and productivity goals, ASBEC 2016

⁴⁰ Urban Efficiency – a global survey of buildings energy efficiency policies in cities, C40, 2015

08 Industry action and support from the City of Sydney

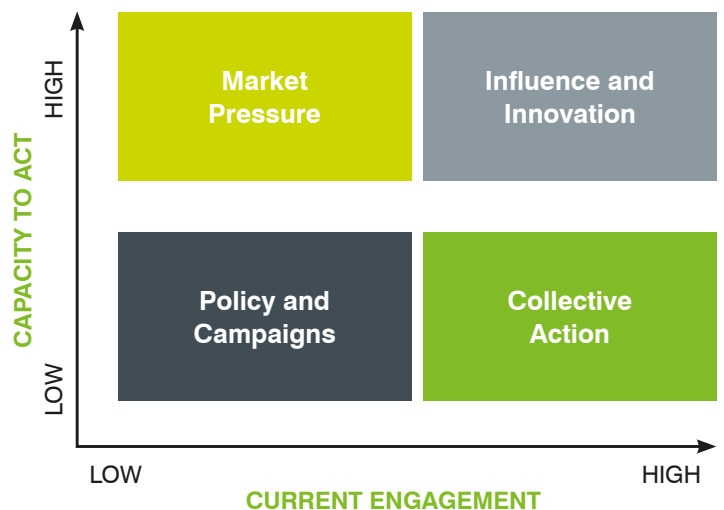
Governments, owners, tenants, managers and developers need to take action towards net zero, showcase its benefits and collaborate to achieve the best outcomes at the lowest cost.

This plan proposes a range of techniques to stimulate activity. It will seek both to raise the bar on minimum compliance expectations for those with low engagement, and to offer support and leadership opportunities to those with high engagement.

It will increase the whole sector's capacity to act with targeted support programs and incentives.

Depending on the level of capacity and engagement, sector players have different roles to play. For example, given the engagement and capacity of the BBP, they are well placed to innovate and influence tenants and peers. Private individual owners may need policy and support to help them act. Corporate tenants without a NABERS rating can request a tenancy rating and engage their building owner on efficiency upgrades. Engaged tenants and managers could access programs like CitySwitch to amplify their action with the support of their peers through collective action.

Sector engagement and relevant actions



All building owners stand to benefit from taking action to improve the environmental performance of buildings.

7.1 Owners

All building owners, from individuals to institutional, stand to benefit from taking action to improve the environmental performance of buildings. Private owners are currently losing money maintaining old equipment, reacting to tenant complaints and paying contractors for band-aid solutions that are not long-lasting. Replacing old equipment with high-efficiency equipment and optimising building management systems should be the priority of private owners to deliver lower costs, reduce tenant complaints and achieve higher asset value.

Action to complete energy assessments and develop long-term asset plans will prepare buildings for policies and regulation that mandate minimum performance standards.

The City will work with government and industry associations and membership groups to engage private owners and provide relevant information at critical decision-making points such as lease expiry, changes to regulation and during the equipment lifecycle.

The City will also continue to work with the BBP and CitySwitch to engage tenants, secure renewable energy and demonstrate to others the benefits of moving to net zero emissions.

Institutional owners and the BBP can focus on collaborating with the City to secure affordable off-site renewable energy and advocate for mandatory disclosure of tenancy ratings.

Actions for all owners

Energy and emissions

- Implement environmental upgrades
- Rate and disclose NABERS Energy performance ratings for base building, combined and whole building in collaboration with tenants
- Support energy performance disclosure and improvement by their tenants
- Upgrade all general lighting systems within tenancies
- Use green leases to enable collaboration with tenants
- Maximise on-site and off-site renewable energy supply options

Waste

- Provide source-separated waste management services for recyclable materials, including organic waste where appropriate
- Use industry best practice⁴¹ to manage and report on waste generation in offices via the NABERS Waste tool to improve industry insights and identify new opportunities for resource recovery
- Work with product and service contractors to implement innovative ideas to minimise waste generation on site and to encourage the re-use and replacement of non-recyclable materials with re-usable or recyclable materials
- Seek non-landfill solutions when establishing waste contracts



Photographer: Katherine Griffiths / City of Sydney

Water

- Undertake and disclose NABERS Water whole building ratings
- Install sub-meters to detect and rectify leaks and drive water-efficient behaviour in tenants
- Optimise cooling tower water efficiency
- Regularly check for leaks and upgrade water fixtures to improve efficiency
- Investigate recycled water supply to cooling towers and other non-potable water consumption and connect when access becomes available

Transport

- Provide ample bike parking and end-of-trip facilities

7.2 Tenants

Office tenants, as the customer, have a high degree of influence over others in the property supply chain. They need to exercise their purchasing power by choosing high-performance buildings. They need to understand their own environmental impact and its influence on whole-building performance.

Tenants potentially lose money and pay higher energy bills due to low building performance. By conducting a NABERS Energy and/or indoor air quality rating tenants can identify energy efficiency opportunities to lower bills and improve staff comfort levels and productivity.

Environmental initiatives can engage staff and customers by showing examples of business values and responsibility to reduce impact. Independent third-party recognition of these efforts is important to validate, motivate and lead further change.

Many companies across the City of Sydney have publicly stated sustainability targets. To build a shared community commitment to net zero and establish pathways to achieve it, the City will recognise and showcase leading companies and share their experiences for others to follow.



CBRE, CitySwitch signatory. Photographer: Marcus Clinton Photography

Actions for all office tenants

Energy and emissions

- Rate and disclose environmental performance
- Upgrade to energy-efficient lighting and appliances
- Maximise renewable energy options
- Demand high-performing buildings
- Engage with building owners on base building performance improvements, including owner-provided general lighting systems in the tenancy
- Collaborate on whole-building performance

Waste

- Request better waste services and reporting from owners
- Engage staff to recycle correctly
- Introduce print on demand software to reduce paper wastage

Water

- Assess water efficiency and contract management to upgrade water fixtures and install sub-meters

Transport

- Encourage cycling, walking and public transport

7.3 Building managers

Building managers and contractors play a crucial role. It is their responsibility to implement upgrades. They often encourage collaboration between owners and tenants. Many have the authority and resources to implement optimisation with no-cost and low-cost upgrades. Many have done so already, and could access the City's grants for ratings and assessments to explore bigger upgrades, present opportunities to owners and tenants, implement and measure performance improvement and report the results.

Actions for building managers

- Implement environmental upgrades
- Measure and present the savings to owners and tenants
- Develop business cases for major upgrades
- Preference the replacement of end of life equipment with the highest efficiency option rather than like for like – considering the life cycle costs and benefits rather than simple cash up front



Pedestrian access to International Towers, Barangaroo. Image courtesy of Barangaroo Delivery Authority

7.4 Developers

All new developments and refurbishments can seize the most cost-effective opportunity to integrate sustainability, at the design and construction stages. Incorporating higher environmental performance standards in new buildings and refurbishments is the most cost effective mechanism in the sector for the reduction of greenhouse gases.

Actions for developers

- Design and construct new buildings to the highest level of sustainability performance available
- Utilise the highest available NABERS Energy Commitment Agreement
- Comply with the City of Sydney's Waste Management Local Approvals Policy and Guidelines for Waste Management in New Developments
- Include dual plumbing in planning proposals where there are opportunities to connect to a recycled water scheme
- Ensure highest available Water Efficiency Labelling Standard (WELS) for taps, toilets and urinals, and dishwashers.
- Minimise water wastage from fire protection systems testing
- Provide bike parking and facilities
- Minimise general car parking and provide car share vehicle spaces and dedicated charging stations for electric vehicles where possible and appropriate

7.5 Australian and New South Wales governments

Many stakeholders argued for the need for stronger policies and regulations to improve the environmental performance of buildings, specifically the need to raise minimum standards, reform the energy market to secure further efficiency and more renewable energy and direct the market to net zero emission buildings by engaging the unengaged sectors.

Key actions for Australian and New South Wales government:

Australian Government

- Establish a price on carbon and increase the mandatory renewable energy target providing policy certainty to the energy market
- Remove energy market barriers for decentralised energy and affordable off-site renewable energy access
- Implement regular mandatory disclosure of NABERS tenancy and whole-building ratings, as opposed to at the time of sale or lease and investigate the opportunity for retro-commissioning of existing buildings to minimum standards
- Increase minimum standards in the National Construction Code
- Increase Minimum Energy Performance requirements (MEPS) and accelerate uptake of energy efficient appliance standards under the national Greenhouse and Energy Minimum Standards (GEMS) program
- Promote the National Carbon Neutral Offset Standard for Carbon Neutral Buildings
- Develop financial incentives for high environmental performance in buildings



NSW and ACT City Switch Awards, Sydney, November 2014 / City of Sydney

New South Wales government

- Increase the Government Resource Efficiency Policy (GREP) to specify that agencies need to occupy buildings with minimum 5.5 - 6 star NABERS Energy rating and ultimately net zero buildings
- Rate and disclose the energy and water performance of government owned buildings
- Collaborate with industry associations to build capacity and deliver targeted information, resources and training to private owners
- Deliver waste market reform to incentivise resource recovery (avoiding waste, recycling, alternative waste treatment, and transparent waste reporting on volume, weight, composition and diversion from landfill)
- Deliver a recycled water pipeline along George Street between Circular Quay Station and Central Station by 2018
- Fund, and where appropriate deliver, an integrated bicycle network to encourage the further take up of cycling
- Deliver key components of an integrated and safe walking network, including road crossings and links through Government lands and developments

7.6 The City's actions

The City will demonstrate leadership in its own office buildings. Engaging tenants, piloting and testing initiatives to improve environmental performance, demonstrating the value of whole-of-building ratings and working towards net zero emissions.

Other actions the City will take:

- Advocate for regulatory reform to facilitate increased investment in, and use of, renewable energy
- Advocate for increased minimum environmental performance standards in building codes, equipment and appliances
- Advocate for water pricing that reflects resource value and promotes innovative water-sensitive solutions including recycled water
- Advocate for increases to the NCC minimum environmental performance standards for building and refurbishments, and increased compliance with the NCC
- Continue to promote the Section J compliance checklist through industry partners
- Advocate for the Government Resource Efficiency Policy (GREP) to specify that agencies need to occupy buildings with minimum 5.5 - 6 star NABERS Energy rating and ultimately net zero buildings
- Advocate for the mandatory regular disclosure of tenancy ratings and retro-commissioning to above minimum standards
- Provide support for whole-building data disclosure and NABERS Energy Ratings



Photographer Jamie Williams/City of Sydney

- Continue to deliver the CitySwitch Green Office Sydney program to office-based businesses
 - Continue to deliver the Better Buildings Partnership program for leading property owners in the local government area
 - Support environmental innovation through the provision of grants and the sharing of success and knowledge
 - Encourage private owners to take action with information, disclosure and campaigns
 - Promote green leasing to enable upgrade activity
 - Support the cost effective uptake of renewable energy with information and campaigns
 - Encourage the design, construction and operation of net zero buildings, both new and existing
 - Deliver a tune-up program to support privately-owned buildings to make environmental performance upgrades
 - Investigate the inclusion of planning control provisions that introduce NABERS Energy Commitment Agreements for new commercial office buildings and major commercial office refurbishments over 500 sqm or 1000 sqm.
 - Promote the use of the updated Guidelines for Waste Management in New Developments
 - Develop a pathway for the City's current planning controls to be strengthened over time to deliver net zero building standards
 - Encourage and support buildings to connect to recycled water
- The City will increase the whole sector's capacity to act with targeted support programs and incentives.**
- Investigate how dual plumbing could be mandated in areas where recycled water is available
 - Provide guidelines to assist the business community with operational and contract waste management templates to achieve improved sustainability outcomes and value for money
 - Support improved commercial waste data collection and verification
 - Educate the business community about available non-landfill, alternative waste treatment solutions for operational waste management
 - Share waste generation data to assist with monitoring recycling performance and identify opportunities for increased resource recovery
 - Continue to deliver the Liveable Green Network, providing connected walking routes across the city
 - Advocate for and develop an integrated bike lane network and distribute cycling and walking maps

09 Existing policies and programs

This plan builds on existing policies, programs and support towards net zero emissions in office buildings.

Better Buildings Partnership

The Better Buildings Partnership (BBP) is a program for Sydney-based institutional owners and property groups to collectively improve their impact. BBP establishes best practice standards for use by owners and their representatives including green leasing, operational and strip-out waste management guidelines.

CitySwitch

CitySwitch supports office-based businesses to improve their day-to-day energy and waste efficiency, increase productivity, reduce operational costs and create value for employees. It includes a resource hub, engagement campaign templates, and industry briefings and events.

National Australian Built Environment Rating System (NABERS)

NABERS is an Australian government initiative that measures and rates the environmental performance of Australian buildings and tenancies.

Commercial Building Disclosure (CBD) program

CBD is a federal government scheme that requires the disclosure of base building NABERS energy ratings and tenancy lighting assessments for spaces of 1000 square metres and above, at the point of sale or lease.

Training for private owners of mid-tier buildings

The NSW Office of Environment and Heritage provides training for facilities managers of privately owned buildings, focusing on simple maintenance, tuning and upgrade opportunities.

Energy Saver

Energy Saver is a NSW government program providing guidance and calculators for upgrading HVAC and lighting, considering net zero impact, and more.

Sustainability Advantage

Sustainability Advantage is a NSW government program that assists organisations across New South Wales to achieve increased competitiveness and improved bottom lines through better environmental practices.

Energy Savings Scheme (ESS)

The Energy Savings Scheme is a NSW government program which creates financial incentives to invest in energy savings activities and improves the rate of return on upgrade projects by creating tradable carbon abatement certificates that can be sold to liable energy generators.

Environmental Upgrade Agreements

Environmental Upgrade Agreements is a NSW government finance mechanism for building owners to access finance for upgrade works of existing buildings that result in energy, water and other environmental savings.

Environmental Grants

The City of Sydney provides grants that incentivise action and innovation in environmental performance.

Cycling in the city

The City is building a bike network which includes dedicated bike paths separating riders from traffic and pedestrians. The City's Sydney Rides events offer expert advice on everything from route planning to buying a new bike. The City also offers courses and bike care and maintenance at the Sydney Park Cycling Centre.

10 Plan development and reporting

The City of Sydney is dedicated to building a culture of sustainability to achieve the objectives of Sustainable Sydney 2030. This plan aims to engage the office sector to act on environmental performance opportunities and lead the city to net zero emissions.

9.1 Plan development

The office sector was prioritised as key to achieving the net zero goal, given the success and leadership of the Better Buildings Partnership and CitySwitch members, the untapped opportunity in the rest of the sector, and the fact that commercial office buildings make up the majority of the floor space in the City of Sydney area.

Targeted engagement was undertaken to gain ideas and insights from office sector stakeholders within the city and test the City's assumptions on the barriers and motivators to environmental sustainability. An external technical and policy Reference Group was convened to provide the City with strategic advice and influence the development and delivery of the plan.

The Reference Group consisted of representatives from a number of key government and private organisations, which included: NSW Office of Environment and Heritage; NSW Department of Planning and Environment; Urban Growth NSW; NSW Department of Trade and Investment; Transport for NSW; Green Building Council Australia; Property Council Australia; Better Buildings Partnership; Energy Efficiency Council; Facilities Management Australia; Engineering Association Australia; Sydney Water; and Jemena.

The City met with the Better Buildings Partnership to understand how the City can further support their leadership. Across the board, there was support and interest for the development of the plan and an overall consensus on the next focal areas for the sector: renewable energy, tenant engagement and privately owned offices.

The City commissioned detailed carbon emission modelling to understand the most effective opportunities for the sector to reduce emissions and conducted targeted engagement to gain insights from office sector stakeholders.

Over 40 stakeholders attended tailored briefings for owners, managers and tenants. The City then held a follow-up session to report back how stakeholder feedback had been incorporated in the plan.

Opportunities identified in these meetings and briefings are included in this plan's suite of actions. Feedback during the consultation also reinforced the need and desire for continued engagement with industry stakeholders.

9.2 Reporting

A monitoring and evaluation plan will be prepared to enable the City to track progress towards the outcomes stated in this plan. Progress will be reported annually as part of the City's environmental reporting. The plan will be reviewed in 2022, and adapted as required to support the sector's progress towards 2030 goals.

Appendix A: Measures, assumptions and actions

The table below details the assumptions behind each carbon reduction measure and how the City and industry actions will deliver on the measures. These actions are a sub-set of those outlined earlier in this plan, which also included actions to reduce water use and waste generation, as well enabling actions that don't provide a direct carbon reduction but which are essential to creating change in the industry.

Renewable energy campaign				
Abatement to 2022	Reduction from 15/16 emissions (t CO2-e)	93,700	% of 2014/15 - 21/22 abatement	36%
Abatement to 2030	Reduction from 15/16 emissions (t CO2-e)	250,700	% of 2014/15 - 29/30 abatement	36%
Key assumptions	Campaigns to encourage voluntary uptake of renewable energy are assumed to lift 100% renewable energy take up to the following levels by 2030: 100% of BBP base buildings; 25% of BBP tenants and of other institutional base buildings and tenants; 12% of property group and owner occupiers (base and tenancy); with no take-up by private owners (base or tenancy).			
City actions	<ul style="list-style-type: none"> • Encourage the design, construction and operation of net zero buildings, both new and existing • Support the cost effective uptake of renewable energy with information and campaigns • Promote green leasing to enable upgrade activity • Advocate for regulatory reform to facilitate increased investment in and use of renewable energy 			
Industry actions	<p>Owners:</p> <ul style="list-style-type: none"> • Maximise on-site and off-site renewable energy supply options <p>Tenants:</p> <ul style="list-style-type: none"> • Maximise renewable energy options • Collaborate on whole-building performance <p>Government:</p> <ul style="list-style-type: none"> • Establish a price on carbon and increase the mandatory renewable energy target providing policy certainty to the energy market • Remove energy market barriers for decentralised energy and affordable off-site renewable energy access • Promote the National Carbon Neutral Offset Standard for Carbon Neutral Buildings 			

Expansion of Commercial Building Disclosure scheme

Abatement to 2022	Reduction from 15/16 emissions (t CO ₂ -e)	47,200	% of 2014/15 - 21/22 abatement	18%
Abatement to 2030	Reduction from 15/16 emissions (t CO ₂ -e)	111,400	% of 2014/15 - 29/30 abatement	16%
Key assumptions	Assumes Commercial Building Disclosure scheme applies to all buildings and tenancies greater than 500 sqm as at June 2018, and requires disclosure every four years (where not triggered by sale or lease). Also assumes that the current exemption for buildings with less than 75% office space no longer applies. Assumes energy use reductions in line with that reported by NABERS annual report 2016 (see page 27 of this plan).			
City actions	<ul style="list-style-type: none"> • Advocate for the mandatory regular disclosure of tenancy ratings and retro-commissioning to above minimum standards, including tax incentives for action • Develop a pathway for the City's current planning controls to be strengthened over time to deliver net zero building standards 			
Industry actions	<p>Owners:</p> <ul style="list-style-type: none"> • Rate and disclose NABERS Energy performance ratings for base building, combined and whole building in collaboration with tenants • Use green leases to enable collaboration with tenants <p>Tenants:</p> <ul style="list-style-type: none"> • Rate and disclose environmental performance, engage in cost-effective upgrades <p>Government:</p> <ul style="list-style-type: none"> • Implement regular mandatory disclosure of NABERS tenancy and whole-building ratings, as well as at the time of sale or lease and investigate the opportunity for retro-commissioning of existing buildings to minimum standards • Rate and disclose the energy and water performance of government-owned buildings 			

NABERS Commitment Agreements

Abatement to 2022	Reduction from 15/16 emissions (t CO ₂ -e)	46,400	% of 2014/15 - 21/22 abatement	18%
Abatement to 2030	Reduction from 15/16 emissions (t CO ₂ -e)	69,300	% of 2014/15 - 29/30 abatement	10%
Key assumptions	<ul style="list-style-type: none"> • Assumes 5.5 star NABERS commitment agreements (CAs) for buildings outside the CBD and 6 star for whole buildings in CBD (with height incentives). Savings are initially high, at around 50% compared to National Construction Code minimums, but fall back to around 25% after the Code is assumed to be lifted in 2019 to 5.5 star. • Assumes institutional and property groups adopt 6 star CAs with height incentives, other building categories don't. • Assumed to apply to the following proportions of floor space per annum: institutional base buildings & tenants 3%; property groups base building 3%; property groups tenants 2%; Private/foreign-owned base building & tenants 1.5%; owner occupied base building & tenants: 1%. 			
City actions	<ul style="list-style-type: none"> • Investigate the inclusion of planning control provisions that introduce NABERS Energy Commitment Agreements for new commercial office buildings and major commercial office refurbishments over 500 sqm or 1000 sqm. 			
Industry actions	<p>Developers:</p> <ul style="list-style-type: none"> • Utilise the highest available NABERS Energy Commitment Agreement 			

Higher energy standards in National Construction Code

Abatement to 2022	Reduction from 15/16 emissions (t CO ₂ -e)	27,200	% of 2014/15 - 21/22 abatement	10%
Abatement to 2030	Reduction from 15/16 emissions (t CO ₂ -e)	87,700	% of 2014/15 - 29/30 abatement	12%
Key assumptions	Applies to new buildings and major refurbishments in all sub-sectors. Assumes National Construction Code Section J energy performance requirements are lifted in 2019 by around 38% - savings are assumed to be lower for institutional owners, as they tend to build above Code minimums already – although assumes 10% of the potential savings are lost through under-compliance.			
City actions	<ul style="list-style-type: none"> Advocate for increases to the National Construction Code (NCC) minimum environmental performance standards for building and refurbishments, and increased compliance with the NCC 			
Industry actions	Government: <ul style="list-style-type: none"> Increase minimum standards in the National Construction Code 			

Increased compliance with National Construction Code

Abatement to 2022	Reduction from 15/16 emissions (t CO ₂ -e)	3,000	% of 2014/15 - 21/22 abatement	1%
Abatement to 2030	Reduction from 15/16 emissions (t CO ₂ -e)	9,700	% of 2014/15 - 29/30 abatement	1%
Key assumptions	The measure is a program to enhance compliance with existing minimum mandatory standards in the National Construction Code (NCC), both in the case of new builds and major refurbishments. For modelling purposes, we assume that the energy savings available through such a measure would be similar to those associated with a building tune-up, as poor commissioning is understood to be one of the most common sources of under-performing commercial buildings. Improved Code compliance is assumed to recover 10% of the potential savings from Code upgrades.			
City actions	<ul style="list-style-type: none"> Advocate for increases to the National Construction Code (NCC) minimum environmental performance standards for building and refurbishments, and increased compliance with the NCC Continue to promote the Section J compliance checklist through industry partners 			
Industry actions				

Enhanced Minimum Energy Performance Standards

Abatement to 2022	Reduction from 15/16 emissions (t CO ₂ -e)	12,200	% of 2014/15 - 21/22 abatement	5%
Abatement to 2030	Reduction from 15/16 emissions (t CO ₂ -e)	61,500	% of 2014/15 - 29/30 abatement	9%
Key assumptions	Assumes Minimum Energy Performance Standards on equipment and appliances are 10% higher than would otherwise be the case.			
City actions	<ul style="list-style-type: none"> Advocate for increased minimum environmental performance standards in building codes, equipment and appliances 			
Industry actions	Government: <ul style="list-style-type: none"> Increase Minimum Energy Performance requirements (MEPS) and accelerate uptake of energy efficient appliance standards under the national Greenhouse and Energy Minimum Standards (GEMS) program 			

CitySwitch Growth

Abatement to 2022	Reduction from 15/16 emissions (t CO ₂ -e)	7,600	% of 2014/15 - 21/22 abatement	3%
Abatement to 2030	Reduction from 15/16 emissions (t CO ₂ -e)	39,500	% of 2014/15 - 29/30 abatement	6%
Key assumptions	In 2014/15 there was 8 million sqm of office floor space in office buildings growing at 1.2% a year. CitySwitch members currently represent 1 million sqm of this floor space. Measure assumes an additional 3.3% of office floor space in office buildings will join CitySwitch each year until 2022 (5% institutional, property group and owner-occupied tenancy floor space, 1% of private owners = 3.3% of total sqm). The CitySwitch participation rate would also grow in line with an assumed sector growth rate of 1.2% p.a. Savings rate is assumed to be up to 15% savings for new members over the 5 years.			
City actions	<ul style="list-style-type: none"> Continue to deliver the CitySwitch Green Office Sydney program to office-based businesses 			
Industry actions	<p>Tenants:</p> <ul style="list-style-type: none"> Demand high-performing buildings Office tenants join the CitySwitch program and retrofit/upgrade their tenancies 			

NSW Government Leasing requirement for 6 star NABERS Energy

Abatement to 2022	Reduction from 15/16 emissions (t CO ₂ -e)	9,300	% of 2014/15 - 21/22 abatement	4%
Abatement to 2030	Reduction from 15/16 emissions (t CO ₂ -e)	14,600	% of 2014/15 - 29/30 abatement	2%
Key assumptions	Assumes that NSW Government agencies are required to lease 6 star NABERS Energy rating buildings. This would represent a significant (up to 50%) saving over current practice, but the impact is assumed to be modest due to the small share of NSW government leased space. Assumed to apply from mid-2018.			
City actions	<ul style="list-style-type: none"> Advocate for the Government Resource Efficiency Policy (GREP) to specify that agencies need to occupy buildings with minimum 5.5 - 6 star NABERS Energy rating and ultimately net zero buildings 			
Industry actions	<p>Government:</p> <ul style="list-style-type: none"> Increase the Government Resource Efficiency Policy (GREP) to specify that agencies need to occupy buildings with minimum 5.5 - 6 star NABERS Energy rating and ultimately net zero buildings 			

National financial incentives

Abatement to 2022	Reduction from 15/16 emissions (t CO ₂ -e)	4,900	% of 2014/15 - 21/22 abatement	2%
Abatement to 2030	Reduction from 15/16 emissions (t CO ₂ -e)	24,600	% of 2014/15 - 29/30 abatement	3%
Key assumptions	<p>A set of financial incentives in the form of tax breaks, accelerated depreciation and low cost finance etc aimed at the private owners and owner occupiers has been modelled.</p> <p>These incentives support annual savings of 10% on average, for those who do respond, but this is only assumed to be a small share of the floor area annually (2%).</p>			
City actions	<ul style="list-style-type: none"> Advocate for the mandatory regular disclosure of tenancy ratings and retro-commissioning to above minimum standards, including tax incentives for action 			
Industry actions	<p>Government:</p> <ul style="list-style-type: none"> Develop financial incentives for high environmental performance in buildings 			

Data driven campaigns

Abatement to 2022	Reduction from 15/16 emissions (t CO ₂ -e)	2,200	% of 2014/15 - 21/22 abatement	0.85%
Abatement to 2030	Reduction from 15/16 emissions (t CO ₂ -e)	12,200	% of 2014/15 - 29/30 abatement	1.73%
Key assumptions	Data driven campaigns target owner-occupiers and private owners only, and are assumed to achieve savings of 5%, on average, for those who do respond, but assumes that only 3% of private owners and 5% of owner occupiers (who have a stronger incentive) do so each year.			
City actions	<ul style="list-style-type: none"> • Provide support for whole-building data disclosure and NABERS Energy Ratings 			
Industry actions	<p>Government:</p> <ul style="list-style-type: none"> • Collaborate with industry associations to build capacity and deliver targeted information, resources and training to private owners 			

Voluntary best practice standards

Abatement to 2022	Reduction from 15/16 emissions (t CO ₂ -e)	2,100	% of 2014/15 - 21/22 abatement	0.81%
Abatement to 2030	Reduction from 15/16 emissions (t CO ₂ -e)	11,200	% of 2014/15 - 29/30 abatement	1.60%
Key assumptions	Voluntary uptake by property groups of Better Buildings Partnership best practice standards. Assumes that around 5% of the floor area (base and tenants) responds each year, and achieves 20% savings on average.			
City actions	<ul style="list-style-type: none"> • Continue to deliver the Better Buildings Partnership program for leading property owners in the local government area 			
Industry actions	<p>Developers:</p> <ul style="list-style-type: none"> • Design and construct new buildings to the highest level of sustainability performance available 			

Environmental grants and building tune-up program

Abatement to 2022	Reduction from 15/16 emissions (t CO2-e)	1,800	% of 2014/15 - 21/22 abatement	0.69%
Abatement to 2030	Reduction from 15/16 emissions (t CO2-e)	9,400	% of 2014/15 - 29/30 abatement	1.33%
Key assumptions	Environmental grants offered by the City and a building tune up program offered by the City are assumed to induce savings of around 5% on average, but with limited take-up varying between 0% and 3% of the floor area annually, depending upon the ownership class.			
City actions	<ul style="list-style-type: none"> • Support environmental innovation through the provision of grants and the sharing of success and knowledge • Deliver a tune-up program to support privately-owned buildings to make environmental performance upgrades 			
Industry actions	<p>Owners:</p> <ul style="list-style-type: none"> • Implement environmental upgrades • Upgrade all general lighting systems within tenancies <p>Tenants:</p> <ul style="list-style-type: none"> • Upgrade to energy-efficient lighting and appliances • Engage with building owners on base building performance improvements, including owner-provided general lighting systems in the tenancy <p>Building managers:</p> <ul style="list-style-type: none"> • Implement environmental upgrades • Measure and present the savings to owners and tenants • Develop business cases for major upgrades • Preference the replacement of end of life equipment with the highest efficiency option rather than like for like – considering the life cycle costs and benefits rather than simple cash up front • Seek out support and training 			





Sydney2030/Green/Global/Connected



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city of villages

Item 3.

Membership - Cooperative Research Centre for Water Sensitive Cities

File No: X009207.002

Summary

The City of Sydney is seeking approval to continue its membership of the Cooperative Research Centre for Water Sensitive Cities Limited (CRC WSC) for a further three year term, commencing 1 July 2018 and ending 30 June 2021. Council approval is required for memberships greater than \$10,000 per annum.

The Cooperative Research Centre for Water Sensitive Cities brings together the inter-disciplinary research expertise and thought-leadership to undertake research that will revolutionise water management in Australia and overseas. In collaboration with over 80 research, industry and government partners, it delivers the socio-technical urban water management solutions, education and training programs, and industry engagement required to make towns and cities water sensitive.

The membership of the Cooperative Research Centre for Water Sensitive Cities aligns with Sustainable Sydney 2030 Direction 2: To Become a Leading Environmental Performer, and its objective to reduce potable water consumption and stormwater gross pollutant loads to the catchment within the local government area. Membership provides access to the latest research into social and technical water urban management, education and training resources that are essential in achieving the City's vision of becoming a water sensitive city and meeting its targets as set out in Sustainable Sydney 2030 and the City's Environmental Action 2016-2021 Strategy and Action Plan.

The membership also aligns with Resilient Sydney - A Strategy for City Resilience 2018 Action 14: Support a more flexible and resilient water cycle and its objective to highlight the need diversify Sydney's water cycle management to secure a liveable growing and resilient Greater Sydney.

Access to the latest research and thought leadership is critical for the City not only to achieve its own water sensitive vision and targets but also to advocate for regulatory and pricing reform to enable better water management outcomes and improve the liveability and resilience of our city.

Recommendation

It is resolved that:

- (A) the City of Sydney continue its membership of the Cooperative Research Centre for Water Sensitive Cities Limited (CRC WSC);
- (B) Council endorse an allocation of \$13,500 (excluding GST) per year for three years to be paid to the CRC WSC, consisting of \$10,000 as an annual contribution for research activities, and \$3,500 per year to be distributed (by the CRCWSC on behalf of City of Sydney) to Splash (hosted by Sydney Water) for its coordination of the NSW Advisory Panel; and
- (C) authority be delegated to the Chief Executive Officer to negotiate, enter into and administer an agreement with the Cooperative Research Centre for Water Sensitive Cities Limited to continue membership of the CRC WSC until 30 June 2021.

Attachments

Nil.

Background

1. The City has supported research into water sensitive cities since 2009 when it committed to support the Cities as Water Supply Catchment research program (as part of a consortium of councils and state agencies) to a maximum value of \$65,000 over five years. This was in line with the City's vision to become a water sensitive city with goals to reduce potable water consumption through water efficiency and recycling and to reduce pollutants discharged to waterways via stormwater run-off. The research outcomes would influence the City's development and implementation of the Decentralised Water Master Plan.
2. The Cities as Water Supply Catchments was three years into its five-year research program before it was expanded to form the Cooperative Research Centre for Water Sensitive Cities on 1 July 2012. The research programs and the consortium membership continued through the transition from Cities as Water Supply Catchments to the CRC WSC.
3. The City continued its consortium membership of the Cooperative Research Centre for Water Sensitive Cities for a further three years between 2015 and 2018 at an annual cost of \$13,500 (excluding GST) consisting of \$10,000 (excluding GST) per year for the CRC WSC research program and \$3,500 (excluding GST) per year as an administration fee to the Splash, Lead Agency of the consortium.
4. Splash was created in 2016 as a program to build capacity in people and organisations around sustainability, liveability, productivity and climate resilience. Through its activities, including knowledge sharing, capacity building, and networking opportunities, Splash provides valuable services to organisations within the water, wastewater and stormwater industries in New South Wales. Splash is hosted by Sydney Water and its key partners include the Office of Environment and Heritage, Department of Planning, Metropolitan Water Directorate, the Cooperative Research Centre for Water Sensitive Cities, Blacktown City Council and others.
5. Splash has taken over the coordination and administration role of the consortium. Splash now coordinates the Cooperative Research Centre for Water Sensitive Cities' regional advisory panel and is the conduit between the Cooperative Research Centre for Water Sensitive Cities and its NSW members for application of research outputs.
6. The City is advocating for regulatory and pricing reform in the NSW urban water sector to enable innovation and investment in water recycling and water sensitive urban design.
7. As part of this advocacy, the City hosted the Water Sensitive Sydney Summit in February 2018. The Summit was attended by industry leaders from state and local government, businesses, developers, researchers and industry associations. The discussion was around the immense challenges of water management in the context of a growing population, aging infrastructure and a warming climate, while maintaining affordability and equity for Sydney's diverse communities. It was evident that attendees were aligned on the vision for a water sensitive Greater Sydney and this alignment can be attributed in part to the research work of the Cooperative Research Centre for Water Sensitive Cities.

8. In 2017, the City coordinated the Cooperative Research Centre for Water Sensitive Cities to use Greater Sydney as a focus for its research project around envisioning and transition strategies for a water sensitive city. An output of these workshops included a vision statement and transition strategies for how Greater Sydney can work towards achieving this vision.

About the Cooperative Research Centre for Water Sensitive Cities

9. The Cooperative Research Centre for Water Sensitive Cities (CRCWSC) was established in July 2012. It is an Australian research centre that brings together many disciplines, world-renowned subject matter experts, and industry thought leaders who want to revolutionise urban water management in Australia and overseas. Its purpose is to help change the way we design, build and manage our cities and towns by valuing the contribution water makes to economic development and growth, our quality of life, and the ecosystems of which cities are a part.
10. To achieve future cities and their regions which are sustainable, resilient, productive and liveable, the Cooperative Research Centre for Water Sensitive Cities' mission is to research interdisciplinary responses to water problems; synthesise diverse research outputs into practical solutions; and influence policy, regulation, and practice to promote adoption.
11. The Cooperative Research Centre for Water Sensitive Cities work with more than 150 researchers and approximately 60 PhD candidates from seven national and international universities and research organisations to generate the knowledge and on-ground solutions required to transform cities into liveable, resilient, sustainable and productive places.
12. The Cooperative Research Centre for Water Sensitive Cities is part of the Commonwealth Government's Cooperative Research Centre (CRC) Program, which currently supports 33 CRCs to commercialise leading-edge research taking place primarily in Australian universities and research institutions, and to produce graduates with hands-on industry experience.

Key Implications

Strategic Alignment - Sustainable Sydney 2030 Vision

13. Sustainable Sydney 2030 is a vision for the sustainable development of the City to 2030 and beyond. It includes 10 strategic directions to guide the future of the City, as well as 10 targets against which to measure progress. The City's continuation of its membership to the CRC WSC is aligned with the following strategic directions and objectives:
 - (a) Direction 2 provides a road map for the City to become - A Leading Environmental Performer - Keeping abreast of the latest research and industry developments was critical in developing the City's Environmental Action 2016-2021 Strategy and Action Plan, Chapter 5: Water Sensitive City and associated actions. It continues to be integral to ongoing implementation, planning and delivery.

Membership of the Cooperative Research Centre for Water Sensitive Cities is considered valuable to the City as it provides access to the latest research into social and technical urban water management, education and training resources that are essential in achieving its vision of becoming a water sensitive city. It also allows the City to collaborate with researchers, provide practical insight into the challenges of implementation and to influence research discussion and future direction.

Organisational Impact

14. Membership involves a 0.1 FTE contribution to cover City staff participation in Cooperative Research Centre for Water Sensitive Cities' events and meetings. This is to ensure councils receive value from their investment through making a commitment to active involvement in the Cooperative Research Centre for Water Sensitive Cities. An example of delivering this FTE component would be attending quarterly Regional Advisory Panel meetings.
15. Benefits of the City's membership include:
 - (a) involvement in the current Cooperative Research Centre for Water Sensitive Cities research projects, to input to and shape the research, and also to bring early results and outcomes back into the City;
 - (b) access to Cooperative Research Centre for Water Sensitive Cities resources from research projects (web login provided to access the library and other resources);
 - (c) being part of a community of practice with other utilities, councils and consultants who are collaborating to create water sensitive cities. The Cooperative Research Centre for Water Sensitive Cities runs Regional Advisory Panel meetings for this purpose - industry partners meet quarterly to discuss the research, plan capacity building activities etc.; and
 - (d) discounted capacity building, training and research adoption activities, including free registration for four council members to attend the CRC WSC Conferences and subsidised travel and accommodation (typically for one person per council).
16. Access to the latest research and thought leadership is critical for the City not only to achieve its own water sensitive vision and targets but also to advocate for regulatory and pricing reform to enable better water management outcomes and improve the liveability and resilience of our city.

Risks

17. The key risk with not continuing membership of the Cooperative Research Centre for Water Sensitive Cities is the knowledge gap that will result. This will jeopardise the City's ability to successfully implement the water related actions within the Environmental Action 2016-2021 Strategy and Action Plan.

Social / Cultural / Community

18. The community will benefit from living in a water sensitive city which is greener and cooler despite projected increases in population and a changing climate.

Environmental

19. Membership of the Cooperative Research Centre for Water Sensitive Cities will assist the City in achieving its vision of a water sensitive city which can: provide the water security essential for economic prosperity through efficient use of the diversity of water resources available; enhance and protect the health of watercourses and wetlands; mitigate flood risk and damage; and create public spaces that harvest, clean and recycle water. A water sensitive city's strategies and systems for water management contribute to biodiversity and reduction of urban heat island effects.

Budget Implications

20. Sufficient funds for membership of \$13,500 (excluding GST) per year are included in 2018/19 operating budget and future year forward estimates.
21. The membership is broken into two parts: \$10,000 per annum will be distributed to the CRC WSC as an annual contribution for research activities, and \$3,500 per annum will be distributed (by the CRC WSC on behalf of City of Sydney) to Splash (hosted by Sydney Water) for its coordination of the NSW Advisory Panel.

Relevant Legislation

22. Local Government Act 1993.

Critical Dates / Time Frames

23. Start Date: 1 July 2018
24. End Date: 30 June 2021

KIM WOODBURY

Chief Operating Officer

Lisa Currie, Manager Water Strategy

Item 4.

Accelerated Replacement of Street Lights

Document to Follow