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Purpose and background

1. The purpose of this report is to seek endorsement of Zero Net Emissions by 2020 – 2014 update (the Strategy) attached to this report as Attachment 2.
2. The Strategy is a Council Plan 2013–17 first year action and updates an existing strategy that was last updated in 2008.

Key issues

3. The Strategy outlines City of Melbourne's approach to reducing emissions across the municipality over the next four years and how it will work with stakeholders to achieve a zero net emissions city. It is a key strategy delivering on Council's vision to be a bold, inspirational and sustainable city and outlines:
 - 3.1. The emissions profile of the municipality.
 - 3.2. Progress since the last update was released.
 - 3.3. Key initiatives City of Melbourne will undertake, what others in the municipality will do and what else needs to happen to become a zero net emissions city across the following segments:
 - 3.3.1. Council operations
 - 3.3.2. commercial buildings and industry
 - 3.3.3. residential buildings
 - 3.3.4. stationary energy supply
 - 3.3.5. transport
 - 3.3.6. waste management.
4. The strategy has been developed with extensive stakeholder engagement including three stakeholder workshops, an external reference group and individual meetings with key government and commercial decision makers and non-government organisations (refer Attachment 4).
5. The outcome of extensive community and stakeholder consultation was that the majority supported the strategy with minor adjustments (refer Attachment 3).
6. The City of Melbourne commitments in the strategy are aligned with the outcomes, priorities and actions in the Council Plan 2013–17 and Annual Plan. Any additional budget required for the implementation will occur through the normal budget processes.

Recommendation from management

8. That the Future Melbourne Committee:
 - 8.1 Endorses Zero Net Emissions by 2020, 2014 update.
 - 8.2 Authorises the Director City Planning and Infrastructure to make any further minor editorial changes to the Strategy prior to publication.

Attachments:

1. Supporting Attachment
2. Zero Net Emissions by 2020 - 2014 Update
3. Zero Net Emissions by 2020 - Community Consultation Report
4. Zero Net Emissions by 2020 - Stakeholder Engagement

Supporting Attachment

Legal

1. There are no legal implications associated with the Strategy.

Finance

2. The City of Melbourne commitments in the strategy are aligned with the outcomes, priorities and actions in the Council Plan 2013–17 and Annual Plan. Any additional budget required for the implementation will occur through the normal budget processes.

Conflict of interest

3. No member of Council staff, or other person engaged under a contract, involved in advising on or preparing this report has declared a direct or indirect interest in relation to the matter of the report.

Stakeholder consultation

4. The stakeholder engagement has informed the vision and objectives of this update of the Strategy and the actions the city should take, as well as action others will take and what further needs to happen to achieve the goal.
5. Public consultation on the draft strategy was held during October and November 2013, in conjunction with consultation on the draft update of Total Watermark - City as a Catchment Strategy (refer Attachment 3).
6. Attachment 4 outlines the organisations that have had active involvement in the development of the strategy.

Relation to Council policy

7. Zero Net Emissions by 2020 – 2014 Update is critical to delivering on the Council's visions of a bold, inspirational and sustainable city and in particular the Eco-City Goal. The strategy articulates our plan for the next four years and beyond to become a carbon neutral city. Council's role to share knowledge and creative solutions is important to achieve the goals of the Strategy.

Environmental sustainability

8. The strategy articulates how City of Melbourne and key stakeholders can work towards becoming a zero net emissions city.

ZERO NET EMISSIONS BY 2020

UPDATE 2014



A COLLABORATIVE APPROACH TO
THE NEXT FOUR YEARS OF ACTION



CITY OF MELBOURNE



AN ECO CITY

We provide solid foundations for the sustainability of Melbourne's communities. We embrace the unfamiliar if it helps us achieve our ambitions. We continue to encourage our community to take positive actions and we lead by example locally, nationally and globally.

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To find out how you can participate in the decision-making process for City of Melbourne's current and future initiatives, visit melbourne.vic.gov.au/getinvolved

STRATEGY SNAPSHOT

Zero Net Emissions by 2020 – update 2014 is our strategy for the next four years and beyond to become a carbon neutral city and create a bold and sustainable future for the municipality of Melbourne. It outlines a way forward for the municipality of Melbourne that has been developed by City of Melbourne in collaboration with key stakeholders. We recognise that we can't achieve such an ambitious goal working alone. Council operations make up less than one per cent of the greenhouse gas emissions of the municipality, so we have developed a plan for key stakeholders to work together towards this goal.

This strategy is part of City of Melbourne's work to become one of the world's most sustainable cities. What we do now will have a crucial effect on the city we will leave for future generations.

Achieving zero net emissions will require substantial structural, economic and policy change in Melbourne to drive an increase in energy efficiency; decrease in use of carbon intensive fuel sources and finally offsetting any remaining emissions.

Some considerable outcomes have been achieved in the ten years since the release of the first *Zero Net Emissions* strategy in 2003. However, collective progress in certain areas has been slow, such as reducing Victoria's reliance on brown coal, our most emissions intensive electricity source. *Zero Net Emissions – Update 2008* was written with the assumption that Australia would put a price on carbon and international policy would be in place to drive significant emissions reductions.

CARBON NEUTRALITY

Being carbon neutral means that the net greenhouse gas emissions associated with an organisation's or city's, activities are equal to zero. It is achieved through a combination of measuring and reducing greenhouse gas emissions and purchasing of carbon offsets. The terms zero net emissions and carbon neutral can be used interchangeably.

Context

In 2011 Australia's Climate Commission defined 2011–20 as the 'Critical Decade'* for changing the pathway we are on to seeing a greater than two degrees increase in global temperatures.

Without significant international movement to decrease emissions in the next few years we are predicted to experience a temperature increase of between 2°C–6.2°C by 2100 (Climate Commission, 2013), which exceeds what is now commonly accepted as the threshold for dangerous climate change, a 2°C increase.

By 2030 Melbourne is predicted to be significantly affected by warmer temperatures and heatwaves, lower rainfall, intense storm events and flash flooding (CSIRO 2007). By 2070 we are predicted to be experiencing more than double the number of heat waves, a more than 10 per cent reduction in rainfall and a significant increase in extreme storm events. These climate changes will impact business and the broader community.



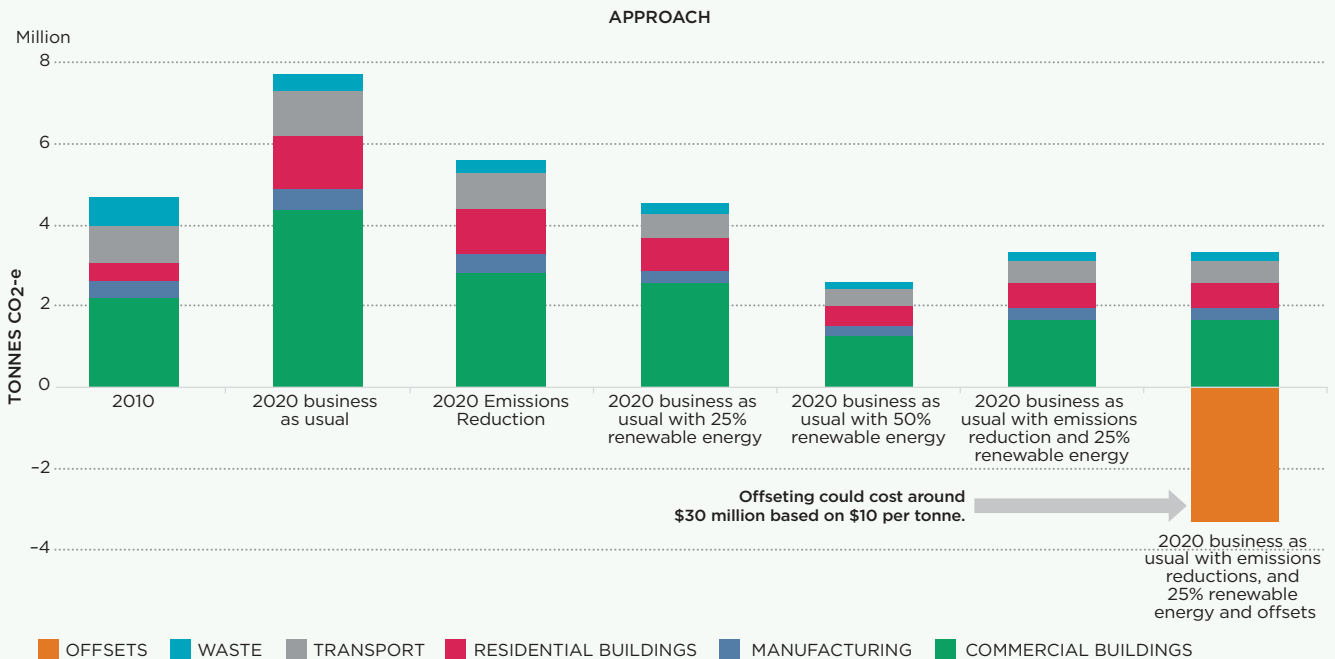
If the municipality of Melbourne continues on its current trajectory, forecasts reveal annual greenhouse gas emissions will grow to around 7.7 million tonnes by 2020 – a 60 per cent increase on 2010 emissions. If Melbourne were to implement all currently viable emissions reduction opportunities by 2020, our emissions profile will still exceed that of our 2010 emissions profile. For Melbourne to achieve zero net emissions by 2020, the actions outlined in this strategy need to be accompanied by fundamental changes to our energy supply which is subject to Australian and Victorian Government policy.

* <https://cci.anu.edu.au/reports/>

CARBON OFFSETS

Carbon offsets are tradeable units that represent abatement of greenhouse gas emissions. Offsets represent the rights to a greenhouse gas reduction, and we retire the carbon offsets we purchase through a registered third party so they cannot be used by anyone else.

MELBOURNE'S 2010 EMISSIONS PROFILE AND POSSIBLE FUTURE EMISSIONS SCENARIOS



HOW COULD WE GET TO A ZERO NET EMISSIONS CITY BY 2020?

What if 50 per cent of the municipality's electricity came from renewable sources?

What if we didn't waste the 10 per cent of energy that is lost in grid transmission and doesn't even make it to the end user?¹ And what if the electricity network made it easy to connect diverse renewable energy sources to the grid?

What if we reduce the city's buildings energy use by 40 per cent by having as standard practice that all buildings are upgraded regularly to ensure they are as energy efficient as possible? And all new buildings used leading technology, design and materials for improved sustainability outcomes.

What if each business and each individual took responsibility for their own activities being carbon neutral? What if the city assisted this process? Would it really cost that much? If we were to offset our emissions today it would cost an average of \$467 per resident per year, \$130 per worker or \$2,655 per business. Some of us are already doing it.

Could we get to zero? Is this future so unimaginable?

These are the big game changing ideas that are very difficult to achieve, but not impossible.

We can't do it alone, and neither can any individual, business, or government entity. But by working together it is achievable.

Over the next four years City of Melbourne will work to explore these possibilities, in collaboration with key organisations and sectors, through establishing effective networks to take action.

¹ <http://www.aemo.com.au/Electricity/Market-Operations/Loss-Factors-and-Regional-Boundaries>



Energy Matters, Federation Square

Targets

Clear, ambitious objectives have been set for each of our focus areas:

Section	Strategy targets
Council operations and leadership	<ul style="list-style-type: none"> • Maintain carbon neutrality • Reduce greenhouse gas emissions by 10 per cent by 2018 (baseline year 2010-11)
Commercial buildings and industry	Increase the average National Australian Built Environment Rating System (NABERS), or equivalent, rating of commercial buildings to 4 by 2018. This roughly equates to an average increase in energy efficiency of 40 per cent per building
Residential buildings	City of Melbourne will establish a baseline and develop a long-term target in the first year of the implementation plan
Stationary energy supply	25 per cent of electricity from renewable sources by 2018
Transport and freight	Increase the percentage of all trips using low emissions transport from 51 per cent in 2009 to 60 per cent in 2018
Waste management	Decrease waste to landfill per resident by 5 per cent by 2018 City of Melbourne to trial seven precinct waste solutions by 2018

Leadership

At this point, fundamental change is required to ensure we minimise the impacts of our changing climate. With over 70 per cent of greenhouse gas emissions generated globally in cities, city governments have a leading role to play in addressing greenhouse gas emissions, driving cultural change and transitioning to a low carbon economy. This is exemplified by the emergence of organisations such as C40 Cities Climate Leadership Group, Local Governments for Sustainability (ICLEI), and Rockefeller Foundation 100 Resilient Cities Centennial Challenge.

The transition towards a low carbon economy is well underway. Significant investment is already being made in renewable energy, research and new technologies, and this is expected to grow. Nationally, more than \$14 billion has been invested in renewables since 2009, while employment in the sector has almost tripled to 9,000 jobs (ClimateWorks Australia – Tracking Progress – Power, July 2013). We are in a position now to take advantage of these emerging opportunities and position Melbourne as a leading city in the inevitable low carbon economy.

City of Melbourne’s leadership activities include:

- City of Melbourne became a certified carbon neutral organisation for the first time in 2011-12.
- We are leading by example through trialling technologies and improving the environmental performance of our properties.

- We have set the municipal target of zero net emissions by 2020 and are now working closely with Victorian, Australian and local governments, businesses, partners and the people of Melbourne to achieve this.
- We are supporting others to act by ensuring that the city’s residents, business owners, building owners and managers, workers and visitors have the information they need to reduce emissions.
- We are delivering innovative programs such as 1200 Buildings, Smart Blocks, City Switch and the Solar Program that provide information, solutions and address barriers to reducing emissions.
- City of Melbourne will continue to share its knowledge, approaches and challenges and learn from other cities through local networks such as the Northern Alliance for Greenhouse Action (NAGA) and the Inner Melbourne Action Plan (IMAP) and global networks such as C40 and the Rockefeller Foundation’s 100 Resilient Cities Network. In particular it will act as the leadership city for the C40 Sustainable Urban Development Network.

Focus areas

We are focussing on the six areas where we can achieve the most effective and viable greenhouse gas emissions reductions: council operations, commercial buildings and industry, residential buildings, stationary energy supply, transport and freight, and waste management.

In each sector, we are implementing viable initiatives to reduce emissions. We are also trialling innovative technologies and collaborating on research and future opportunities.

Our shared path to a zero emissions future.

City of Melbourne has a goal to achieve zero net emissions for the municipality. To achieve this goal, the city's climate change mitigation strategy outlines the greenhouse gas emissions impact of the municipality, and creates a path to reduce these emissions.

Zero net emissions or being 'carbon neutral' means that the net greenhouse gas emissions, associated with the city's activities, are equal to zero. It is achieved through a combination of measuring and reducing carbon emissions along with the purchasing and cancelling of carbon offsets.

Achieving zero net emissions helps address the issue of climate change. Climate change is a change in the average pattern of weather over a long period of time. There is clear evidence that our climate is changing largely due to human activities. Human-induced climate change is caused by the release of greenhouse gases into the Earth's atmosphere.

The six main greenhouse gases are:

- CO2** carbon dioxide
- HFCs** hydro-fluorocarbons
- CH4** methane
- PFCs** per-fluorocarbons
- N2O** nitrous oxide
- SF6** sulphur hexafluoride

ZNE = Total emissions - emissions reductions - offsets

Climate change directly impacts Melbourne and Victoria



Currently...

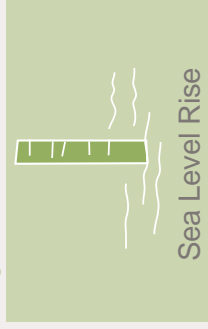
From 1998 to 2007, Victoria experienced rainfall

14% below average.

And in the future...

By 2070, annual average rainfall is expected to decrease by

11% but come in more intense bursts.



Every year since 1993, there has been average sea level rises in areas near Melbourne of up to

2.8mm



Flood risks exist in precincts near the Yarra and Maribymong rivers and Moonee Ponds Creek including Docklands, Southbank and Fishermans Bend. This is due to high tides and extreme rainfall events.



On average we experience

9 very hot days in Melbourne (temperature exceeds 35°C).

By 2070, we expect to experience

26 very hot days in Melbourne and increased frequency of heat waves (five or more consecutive days of temperatures exceeding 35°C).

There are global policies in place to govern climate change.

UNFCCC

United Nations Framework Convention on Climate Change
International climate change treaty joined by countries around the world.

COPENHAGEN ACCORD

Recognises "the scientific view that the increase in global temperature should be below 2°C."

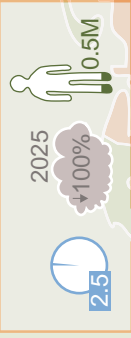
KYOTO PROTOCOL

International agreement of the UNFCCC Parties, which set internationally binding emissions targets for 2008 - 2012.

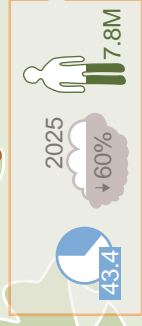
Climate change is a global issue.

No matter where emissions are generated, the impacts of climate change are felt across the world. These impacts are only predicted to worsen if we do not take action. It is a global issue to which every country contributes, yet those countries that have the lowest impact are some of our most vulnerable.

Copenhagen, Denmark



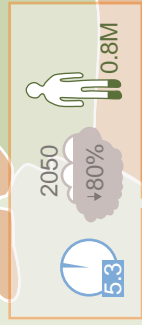
London, England



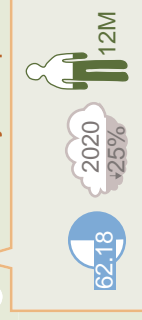
New York, USA



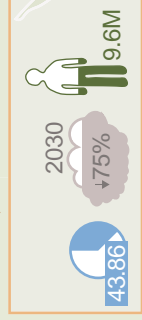
San Francisco, USA



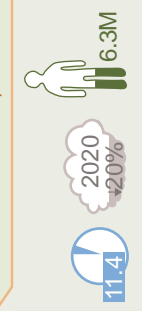
Tokyo, Japan



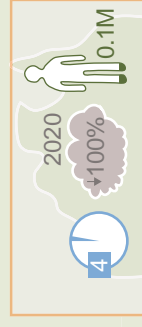
Jakarta, Indonesia



Rio de Janeiro, Brazil



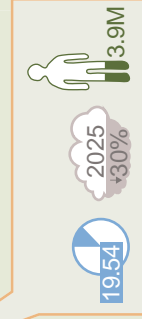
Melbourne, Australia



Did you know that Australia is the **largest** emitter per capita in the developed world?

How does Melbourne compare?

Johannesburg, South Africa



Emissions (million tonnes of CO₂e)



Emissions reduction target and by when



Population (millions of people)



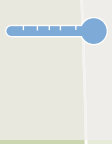
Top 5 Emitters

- 1 China
- 2 USA
- 3 India
- 4 Russia
- 5 Japan

Most vulnerable regions

- South Asia
- South East Asia
- China
- East Africa

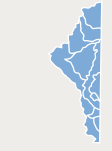
What will happen if there is a 2°C increase in global temperatures?



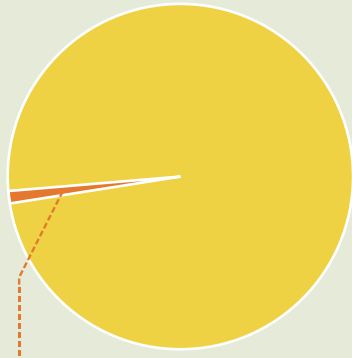
More heavy rain over land, increasing floods



20% of species at risk of extinction

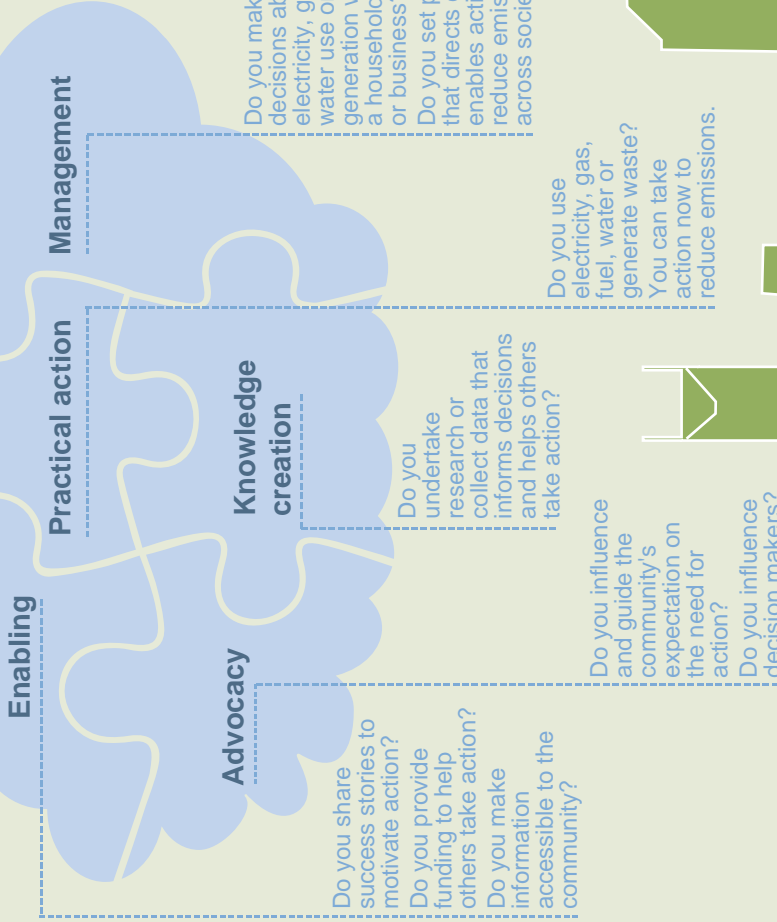


This is what Melbourne's emissions profile looks like... and how you can contribute to achieving reductions.



Council operations within the municipality of Melbourne make up a small proportion of emissions. In order to reduce emissions within the municipality, we all need to work together.

Which piece of the puzzle are you?



How do you contribute to emissions?

Commercial and industrial gas and electricity 57.2%

Transport 24.3%

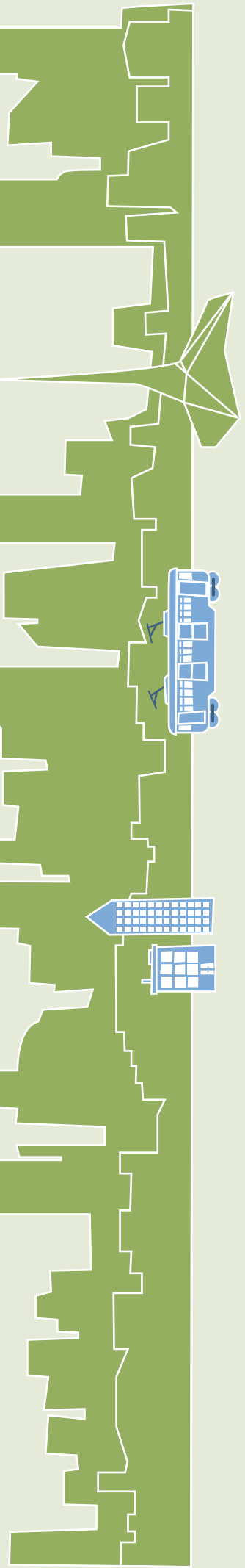
Residential gas and electricity 13.9%

Waste 3.6%

Mains water 1.1%

Why is brown coal significant?

92% of Victoria's electricity is generated using brown coal. It produces more emissions than other energy sources such as natural gas.



Where are the opportunities to reduce emissions in Melbourne?

Commercial buildings

- Efficient new buildings
- Base building and tenancy energy efficiency
- Local energy generation

Key policies and legislation

Melbourne Planning Scheme Amendment C187
Victorian Energy Efficiency Target (VEET)
Building Code of Australia
National Greenhouse and Energy Reporting System (NGERS)
Energy Efficiency Opportunities (EEO)
National Australian Built Environment Rating System (NABERS)

Transport and freight

- Efficient operation of public transport systems
- Shift to active and public transport
- Switch to more efficient cars, like hybrids and electric vehicles
- Car sharing
- Low emissions energy/fuel supply

Key policies and legislation

National Greenhouse and Energy Reporting System (NGERS)
Energy Efficiency Opportunities (EEO)

Residential buildings

- Efficient new buildings
- Apartment common area energy efficiency
- Energy efficiency within houses and apartments
- Local energy generation

Key policies and legislation

Melbourne Planning Scheme Amendment C187
Victorian Energy Efficiency Target (VEET)

Stationary energy supply

- Decentralised energy solutions
- Innovation and new technologies
- Renewable or lower emissions-intense energy supply

Key policies and legislation

Renewable Energy Target (RET)

Waste

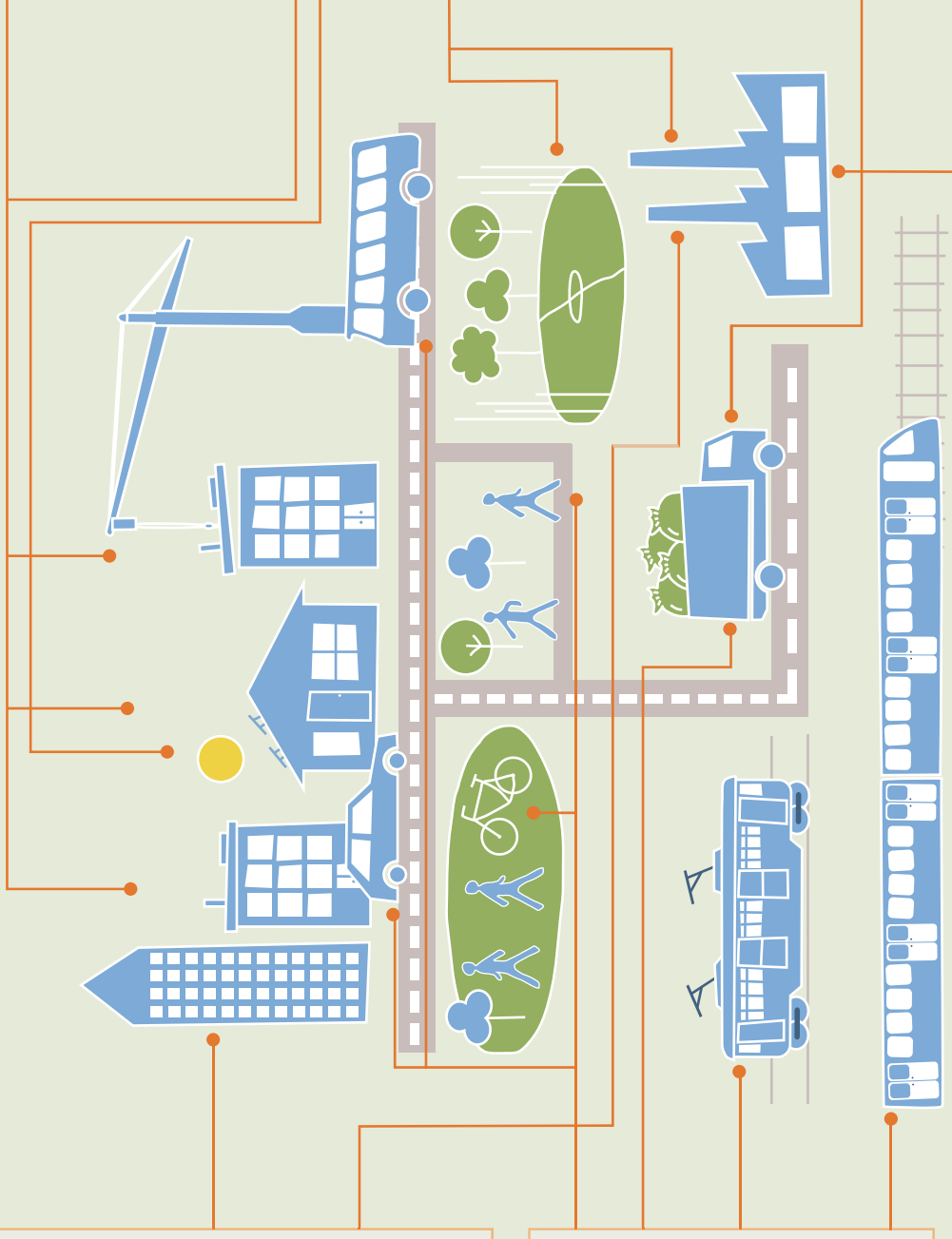
- Waste-to-energy
- Local precinct solutions for businesses
- Waste reduction
- Increased recycling

Key policies and legislation

Integrated Waste Management Program

Industry

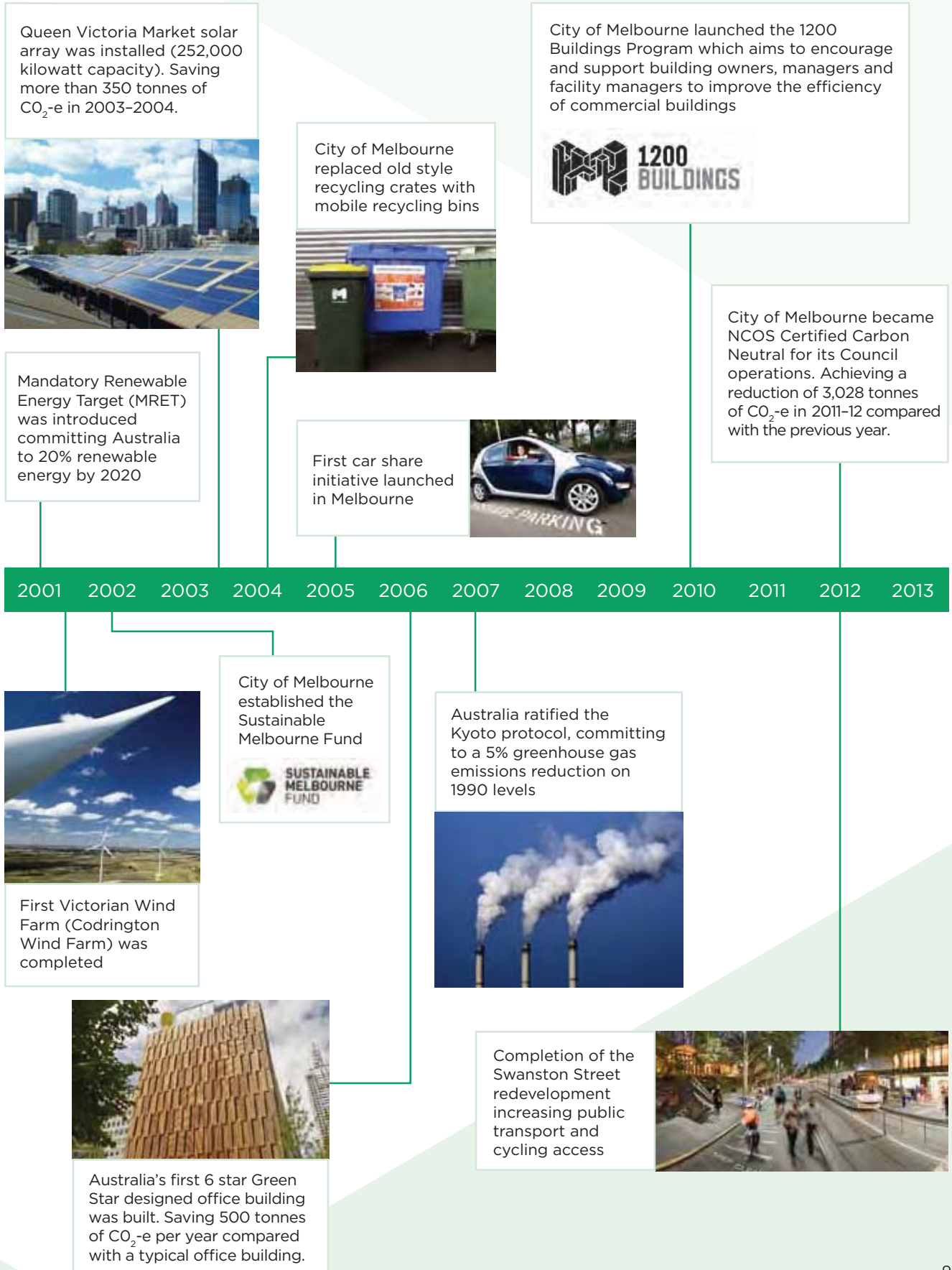
- Energy efficiency
 - Local energy generation
- Key policies and legislation
National Greenhouse and Energy Reporting System (NGERS)
Energy Efficiency Opportunities (EEO)



Sources
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[\(http://msidc.org/arcticseaicenews/\)](http://msidc.org/arcticseaicenews/)
http://www.ipcc.ch/publications_and_data/ar4/wg2/en/ch4s4-4-11.html
 ClimateWorks Australia, City of Melbourne Roadmap to Zero Net Emissions May 2013

OUR PROGRESS

IN 2003, CITY OF MELBOURNE SET AN AMBITIOUS GOAL OF BECOMING A ZERO NET EMISSIONS CITY BY 2020. WE HAVE MADE SIGNIFICANT PROGRESS OVER THE PAST DECADE.



STRATEGY DEVELOPMENT AND IMPLEMENTATION

This Zero Net Emissions by 2020 – update 2014 builds on our strengths in delivering effective programs and on knowledge gained from implementing the 2003 and 2008 Zero Net Emissions strategies.

A detailed four-year implementation program will accompany this strategy, setting out a clear timeline for action. The implementation plan will be produced by the end of 2014, and will be evaluated annually. The plan will contain more detail on project implementation, monitoring and reporting, timelines and collaborations with partner organisations.

The implementation plan will include an operational budget. Project costs will also be outlined in City of Melbourne's annual budget process, which is publicly available.

Working together

Reducing Melbourne's greenhouse gas emissions and working to become a zero net emissions city requires collaboration from everyone in our community. A comprehensive, forward-thinking approach right now is crucial to implement the sustainable energy, infrastructure, transport and waste systems required to reduce our growing emissions.

The Victorian Government, business and research organisations have all been involved in creating this strategy and City of Melbourne will work with them in its implementation.

This strategy includes what we will do, what others will do and what else needs to happen to achieve zero net emissions by 2020. The actions identified as 'what others will do' are a representation of activities being undertaken by others in Melbourne based on what our stakeholders have told us and publicly available information. The actions identified as 'what else needs to happen' have not currently been committed to by an organisation, but are gaps that need to be filled to allow us to become a zero net emissions city. City of Melbourne will work to bring together key stakeholders to progress these actions.

In implementing this strategy, City of Melbourne will:

- Develop a network of leading organisations to work with us to address key opportunities and barriers and annually review actions to ensure the strategy remains relevant.
- Create and strengthen partnerships with organisations to address barriers to reduce emissions.
- Work with the Australian, Victorian and local governments to improve coordination and governance.
- Explore delivering an offset service for community members to neutralise their greenhouse gas emissions.
- Opportunities will be prioritised based on the criteria outlined in the diagram on the following page.

Zero Net Emissions strategy engagement process

- In developing this strategy we have collaborated with a broad range of partners including:
 - » Victorian Government departments
 - » Energy companies
 - » Regulators
 - » Property developers
 - » Transport providers
 - » Education institutions and researchers
 - » Non-government organisations
 - » Industry associations
 - » Other local councils.
- From the conception of the strategy, over 30 organisations helped to identify the focus areas, issues and challenges to be addressed. We then consulted further about the actions needed to achieve our objectives and targets.
- An external reference group of relevant leaders also provided input and guidance.
- We ran a six-week community consultation in 2013, during which community members had the opportunity to provide feedback on the draft document.

PRINCIPLES FOR THE PRIORITISATION OF ACTIONS



MELBOURNE'S EMISSIONS PROFILE

The latest greenhouse gas emissions data for the municipality of Melbourne shows that overall emissions are trending up, with significant increases in 2011-12 and 2012-13.

Non-residential electricity usage by commercial buildings and industry clearly has the biggest single impact, accounting for over 50 per cent of our emissions profile.

Measuring our progress

Municipality of Melbourne's Greenhouse gas emissions profile

Carbon footprint (kt CO₂-e)

Carbon dioxide equivalent	2008/09	2009/10	2010/11	2011/12	2012/13
Water (residential)	11	11	11	10	11
Water (non-residential)	33	35	32	31	35
Electricity (residential)	316	521	448	262	292
Electricity (non-residential)	3,202	2,144	1,908	3,462	4,153
Gas (residential)	73	69	78	78 **	78 **
Gas (non-residential)	251	241	262	262 **	262 **
Residential waste	26	27	30	30	31
Industrial waste	107 *	107 *	107 *	107 *	107 *
Transport	923 *	923 *	923 *	923 *	1,025
Total	4,943	4,079	3,799	5,164	5,994

* Once-off audit to obtain average annual estimate

** 2010/11 data used as updated data was not available at time of printing

We have not compared our progress against the emissions profile in our previous strategies because we have changed our measurement approach.

Previously, greenhouse gas emissions were calculated based on a scaling-down of state and national data, using population and employment data.

We now have access to locally collected data such as electricity and gas consumption, provided by energy distribution companies operating within the municipality. This change gives a more accurate picture of the emissions impact of the city, but makes it difficult to track progress against figures reported in previous strategies.

Our data on transport and waste emissions has been obtained from an audit completed in 2008-09 and we will work with the transport and waste sector to improve the way we collect this data in the future.

Greenhouse gas emissions associated with refrigerant leakage cannot currently be quantified. We will work with the industry and others to quantify and reduce these emissions throughout the municipality.

WHAT IS A GREENHOUSE GAS?

Greenhouse gases are atmospheric gases that absorb and emit radiation. The additional greenhouse gases in the atmosphere due to human activities are causing climate change. The Kyoto Protocol lists six significant greenhouse gases – carbon dioxide (CO₂), methane (CH₄), nitrous oxide (N₂O), hydro-fluorocarbons (HFCs), per-fluorocarbons (PFCs) and sulphur

Opportunities to reduce emissions

City of Melbourne engaged ClimateWorks Australia to undertake an in-depth assessment of how Melbourne can unlock opportunities to significantly reduce the municipality’s greenhouse gas emissions.

Through this research and technical analysis, City of Melbourne has identified evidence-based priorities, which optimise the size of emissions reduction and minimise cost. Commercial buildings represent the largest potential to reduce emissions. Residential buildings, manufacturing, transport, waste and energy supply are other key sectors where technologically feasible and commercially available opportunities to reduce emissions are evident. The data shows the financial benefits for Melbourne’s economy from adapting to and embracing a low carbon future.

This research reaffirms the importance of many programs we have underway and shows the need for urgent change by business, residents, industry and the Victorian Government to reduce emissions.

ClimateWorks research reveals that if we continue our current journey towards reducing Melbourne’s carbon footprint, greenhouse gas emissions will grow to around 7.7 million tonnes by 2020 – a 60 percent increase on 2010 emissions.

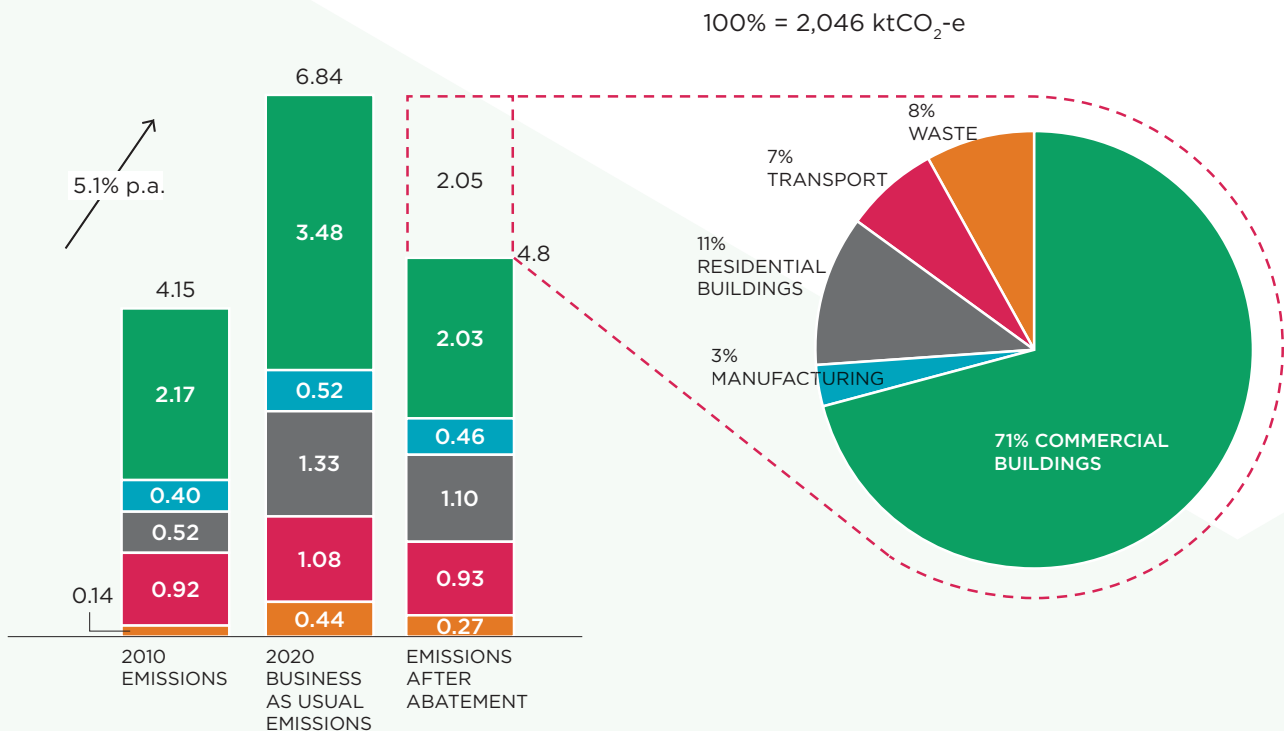
By implementing the opportunities identified by ClimateWorks, the municipality could reduce greenhouse gas emissions by 2020 by approximately 2.2 million tonnes per year, or 28 per cent, which is approximately the same amount of emissions expected from growth over this time.

To achieve zero net emissions by 2020 City of Melbourne, government, businesses and the people of Melbourne need to work together to successfully implement these opportunities, enhance government policy and change our energy supply, as fast as possible.

PERCENTAGE OF EMISSIONS TOTAL, 2010-11 ESTIMATES

BUSINESS AS USUAL EMISSIONS AND ABATEMENT FOR THE CITY OF MELBOURNE* (MtCO₂-e, 2020 ESTIMATES)

BREAKDOWN OF OPPORTUNITY BY SECTOR (% OF TOTAL ABATEMENT OPPORTUNITY, 2020 ESTIMATES)



Source: ClimateWorks team analysis, City of Melbourne’s 2010 Carbon inventory

2020 MARGINAL ABATEMENT COST CURVE

Cost and abatement potential of emissions reduction opportunities

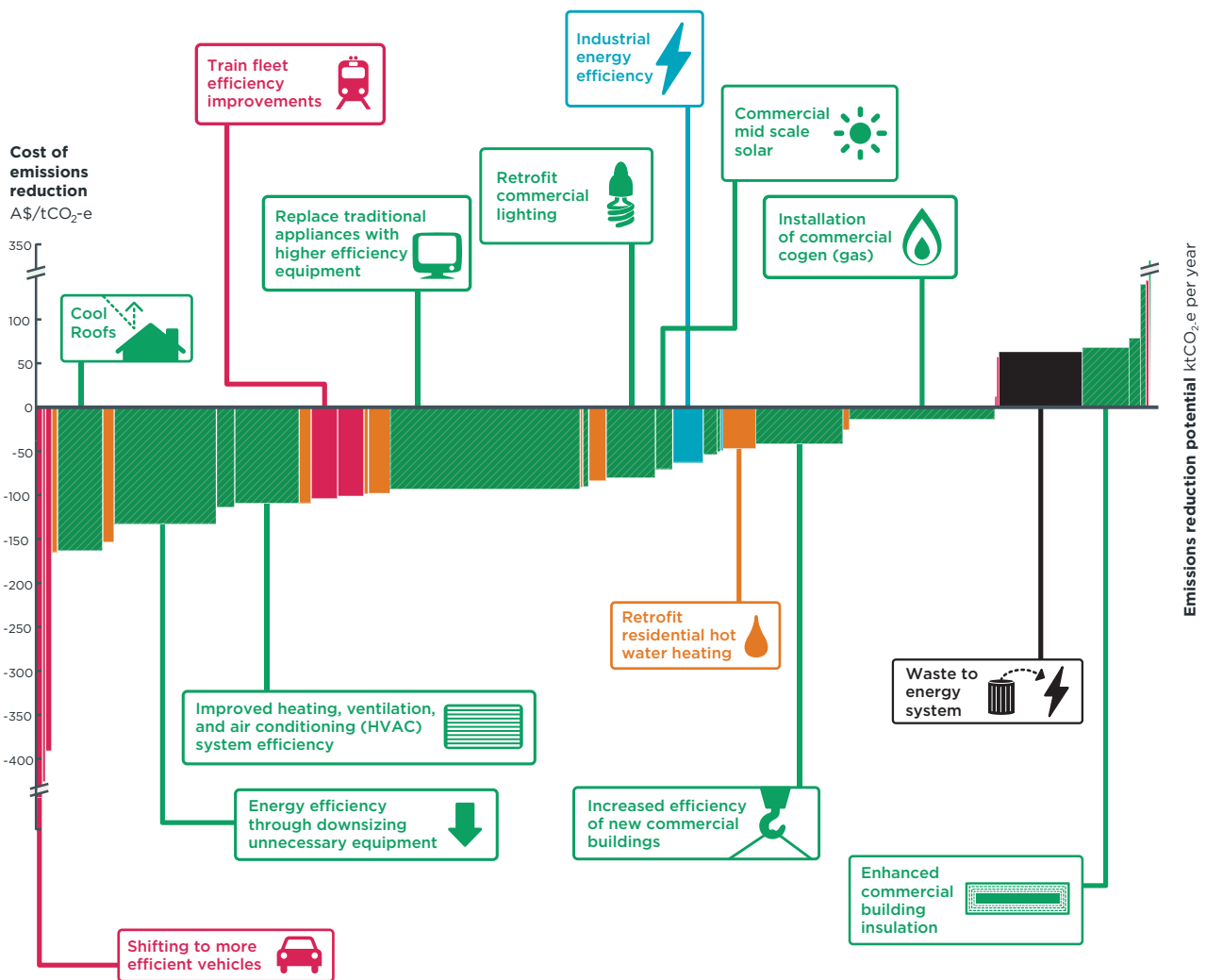
KEY

Opportunities are sorted from left to right by increasing costs per tCO₂-e

Each box represents one emissions reduction opportunity

A ↑ A Estimated cost to reduce emissions in A\$/tCO₂-e (in 2020\$)
B ↓ B Cost and abatement potential of emissions reduction opportunities
 ← B →

■ Waste
 ■ Industry
 ■ Transport
 ■ Commercial buildings
 ■ Residential buildings



COUNCIL OPERATIONS

City of Melbourne will lead action across Melbourne to reduce emissions through meeting ambitious targets, implementing new technologies and supporting others to act.

Targets

- Maintain carbon neutrality for council operations.
- Reduce greenhouse gas emissions by 10 per cent by 2018 (based on baseline year 2010-11).

The challenge

In becoming carbon neutral, we have encountered some challenges in trying to improve the environmental performance of our assets.

For some of our older buildings, particularly the heritage listed Melbourne Town Hall; we face considerable challenges in trying to improve the environmental performance with reasonable payback periods.

We have learnt a lot from building and operating Council House 2, Australia's first six-star Green Star rated building. The complex technology has required new expertise and time to fine-tune the way it operates. To assist in identifying improvement opportunities, Council House 2 was recently tested under the National Australian Built Environment Rating System (NABERS) scheme, and received a 4 star whole building rating. Council is now implementing changes to improve the building's performance to its design potential and has allocated the appropriate budget necessary.

Proposed approach

We will review and measure the effectiveness of the following emission reducing initiatives annually.

Flagship projects

Over the next four years, City of Melbourne will:

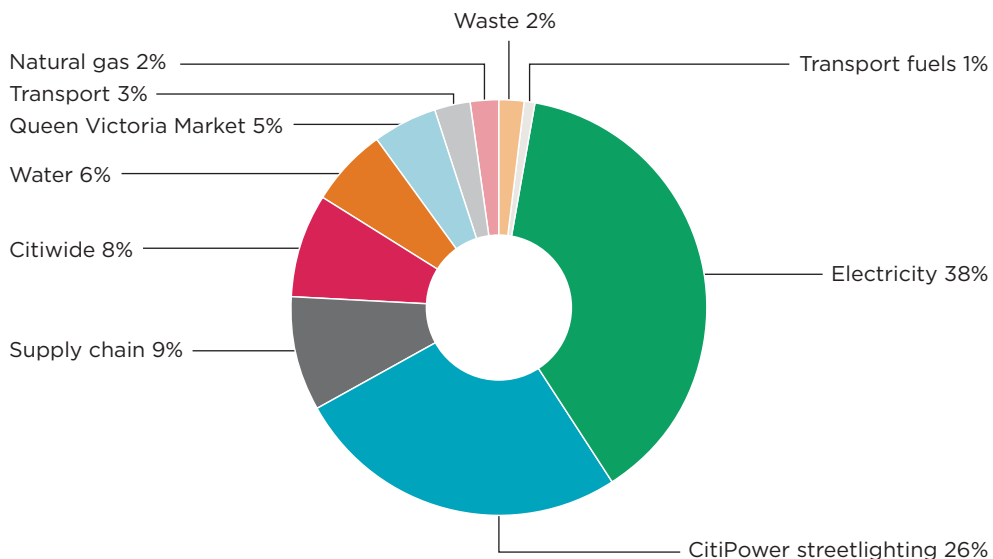
- Undertake a world-leading sustainable redevelopment of Queen Victoria Market.
- Lead by example with sustainable developments such as Docklands Library.
- Trial the Green Building Council's Green Star Performance Tool on our buildings including ArtPlay and East Melbourne Library.

City of Melbourne will continue to:

Energy

- Implement an Energy Performance Contract that includes the retrofit of 13 of the city's largest buildings. This contract, which began in 2010, guarantees emissions savings of 1,560 tonnes CO₂-e (carbon dioxide equivalent) per year and will be achieved through appropriate energy efficiency measures at each site, including the Queen Victoria Market.
- Implement the 2013 *Public Lighting Strategy*, including a rollout of energy efficient street lighting technologies.
- Trial low emissions technologies on council buildings.

CORPORATE GHG INVENTORY 2012-13



Source: City of Melbourne

- Upgrade existing buildings, as appropriate, to meet current environmental standards. This will include a range of passive energy control methods from insulation and ventilation through to solar hot water and photovoltaic panels.
- Investigate opportunities for precinct energy solutions for council facilities.
- Undertake NABERS ratings for council's largest buildings and make these ratings public.

Corporate travel

- Investigate procuring vehicles run on new and emerging sustainable technologies.
- Work with the Victorian Government on its electric vehicle trial by using electric vehicles in council's fleet and assessing their performance.
- Investigate opportunities to install renewable energy technologies for recharging council's electric vehicles.
- Encourage greater take-up of electric and low emission transport through staff engagement and education.

Waste

- Implement the waste management plan and conduct audits to track progress.

Supply chain

- Use sustainable building materials where possible. For example, we are using cross-laminated timber in our new Docklands Library.

Staff development

- Incentivise staff to reduce paper usage and waste.
- Train staff on council's sustainability commitments and programs and offer specialist training opportunities on how different business areas can contribute.

Urban Forest

- Implement City of Melbourne's *Urban Forest Strategy* to reduce the urban heat island effect and decrease cooling requirements for buildings.

City of Melbourne will also:

Energy

- Release an energy reduction plan for our existing buildings outlining our approach for achieving significant emissions reductions. This will include investigating options for office accommodation and fit-outs that optimise energy and space efficiency.
- Develop minimum environmental design standards for new council buildings.

- Release a green information technology plan that explores opportunities to reduce energy used by information technology infrastructure.
- Enhance sustainable buildings knowledge and capacity within City of Melbourne to provide internal and external advice.
- Ensure all building projects achieve a rating of at least five star Green Star (or equivalent) where 50 percent or more of the building is being renovated.

Supply chain

- Undertake a review of opportunities to reduce the impacts associated with our supply chain and implement new initiatives.
- Require environmental reporting by providers of major impact services and products.
- Increase the number of major contracts with carbon neutral services.
- When our banking services contract is due for renewal, in accordance with our *Sustainable Procurement Policy*, we will seek information from tenderers about their sustainability commitments and investment strategy. (Council's current services are provided under a Victorian Government contract with Westpac until June 2016.)

Subsidiaries

- Work with our wholly owned subsidiary CityWide to implement viable energy, waste and water efficiency opportunities.



COMMERCIAL BUILDINGS AND INDUSTRY

Reducing emissions from the commercial building sector is vital to achieving zero net emissions. City of Melbourne will work with building owners, managers and industry to implement effective and efficient solutions.

Target

- Increase the average NABERS, or equivalent, rating of commercial buildings to 4 (this roughly equates to an average increase in energy efficiency of 40 per cent per building) by 2018.

The challenge

This sector has the biggest single impact, with non-residential electricity usage by commercial buildings and industry accounting for over 50 per cent of the municipality's emissions profile.

The municipality of Melbourne has over 4.1 million square metres of office space and almost 400,000 people work in the central city area of Melbourne each weekday.

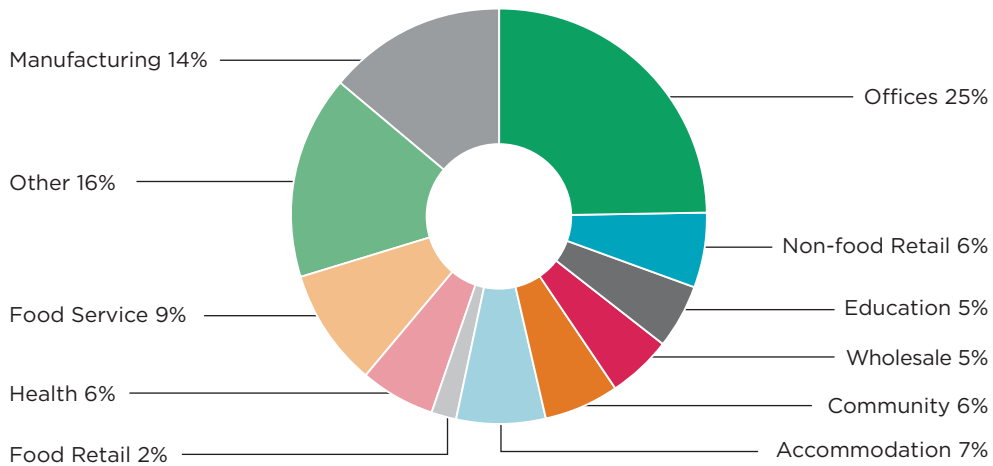
More than two-thirds of the opportunities identified through the ClimateWorks analysis are for commercial buildings. This equates to around 1.6 million tonnes of emissions reduction and around \$108 million tonnes of

annual energy cost saving per year by 2020. Based on this analysis the average cost of retrofitting commercial buildings is paid back in less than four years.

Many lower cost energy efficiency measures have already been implemented in commercial buildings owned by institutional investors, and private building owners are making progress at a reasonable rate. Barriers to action include access to suitable finance, conflicting priorities, disruption to tenants, lack of expertise and gaps in skills. Another barrier is split incentives, which arise when building owners lack financial motivation to implement energy saving upgrades because the tenants pay the energy bills.

% OF TOTAL, 2010-11 ESTIMATES

100% = 2,827 ktCO₂-e*



*Total estimated emissions in 2010-11 using ClimateWorks model (but City of Melbourne's emissions intensity for electricity), which differ slightly from City of Melbourne's estimates

RESOURCES AND PROGRAMS FOR COMMERCIAL BUILDINGS

SERVICES	TARGET AUDIENCE			APPROACH	
	BUILDING TENANT (BUSINESS)	BUILDING OWNER (INSTITUTION/INDIVIDUAL)	GOVERNMENT	INFO/RESOURCE	FINANCE
INFORMATION RESOURCES					
1200 Buildings 		✓	✓	✓	✓
City Switch 	✓				
Sustainable Melbourne Fund 	✓	✓		✓	✓
Greener Government Buildings (Victorian Government)			✓		
Energy Saver Incentive Scheme (Victorian Energy Efficiency Target)	✓	✓			✓
Smarter Resources, Smarter Business Program (SV)		✓		✓	✓
Carbon Compass				✓	
National Carbon Offset Standard (Carbon Neutral Standard)			✓		

REPORTING MECHANISM	BUILDING TENANT (BUSINESS)	BUILDING OWNER (INSTITUTION/INDIVIDUAL)	GOVERNMENT	INFO/RESOURCE	FINANCE
Commercial Building Disclosure (>2000m ²)	✓	✓	✓		
Energy Efficiency in Government Operations			✓		
National Australian Built Environment Rating System (NABERS)		✓	✓		

KEY

\$ Finance incentive

Finance available

Proposed approach

Over the next four years City of Melbourne will showcase the potential to create positive-energy buildings, which generate more energy than they use. We will facilitate opportunities to drive efficiency outcomes through the design, construction and performance of buildings. We will also facilitate ways to overcome the barriers currently preventing action to achieve high performing commercial buildings.

City of Melbourne will continue to:

- Engage existing networks for Melburnians to share ideas on sustainable building solutions.

New buildings

- Identify channels to engage with developers and building designers in the early stages of new projects.
- Implement the *Energy, Water and Waste Efficiency Planning Policy* to apply specific industry-recognised standards in new buildings.

Building owners

Implement and enhance the 1200 Buildings Program that aims to encourage the environmental retrofit of the municipality's commercial building stock. The program will:

- Include more one-on-one engagement with private building owners.
- Promote positive-energy buildings.
- Focus on heating, ventilation and air conditioning information.
- Develop information and advice tailored to hotels and large retailers.
- Deliver a cool roofs education program to minimise heat absorption and help reduce the urban heat island effect.
- Explore an expansion of existing finance mechanisms offered to building owners.
- Communicate building environmental performance with government and the private sector.
- Work with Victorian and Australian governments to accelerate inclusion of green building standards into building codes and planning mechanisms.
- Support the financing of commercial building retrofits by providing Environmental Upgrade Agreement financing, administered by the Sustainable Melbourne Fund.
- Promote emerging initiatives such as the Green Building Council of Australia's Green Star Performance Rating Tool.

Tenants

- Extend the CitySwitch program that helps commercial office tenants to improve energy efficiency through:
 - » Carrying out education on energy efficient appliances and addressing barriers to upgrades.
 - » Including resource recovery in office and building advice and support.
 - » Creating a targeted program for new tenants.
 - » Developing a cost effective model for walk-through energy advice services.

City of Melbourne will also:

- Create and strengthen partnerships with key utility and manufacturing companies on energy efficiency and renewable energy opportunities.
- Expand City of Melbourne's business platforms to include resources and services that support hospitality and retail tenants.
- Through the implementation of our *Retail and Hospitality Strategy*, work with businesses to:
 - » Increase sustainable procurement, amenity of waste collection and resource recovery.
 - » Support energy efficient practices and a switch to sustainable energy sources.
 - » Promote successes around environmental sustainability.
 - » Develop options for improving freight efficiency in the central city.

City of Melbourne will undertake research to:

- Enhance our understanding of the interests and influences of commercial building facilities managers and tenants.
- Update understanding of energy efficiency drivers and barriers for building owners and tenants.
- Explore incentives for improved environmental performance of office buildings.
- Gauge building retrofit activity and economic benefits.
- Quantify emissions associated with refrigerant leakage, in consultation with industry.
- Support research into sustainable building materials and incorporate findings into our programs.
- Explore the impact of sustainable buildings on the health and wellbeing of employees.

What others will do:

- The Victorian Government will deliver the Greener Government Buildings program.
- The Victorian Energy Efficiency Target (VEET) scheme, promoted as the Energy Saver Incentive, will encourage the uptake of energy efficiency improvements in residential, business and other non-residential sectors.
- Sustainability Victoria will assist businesses to make demonstrable energy and material savings and to change inefficient practices through the Smarter Resources Smarter Business program.
- The Green Building Council of Australia will continue to rate, educate and advocate for the transformation of the built environment to more sustainable practices. With the release of the Green Star – Performance, the Green Star suite of rating tools will be expanded to address buildings in operation as well as the design and construction of buildings.
- The Energy Efficiency Council will implement the Integrated Energy Efficiency Retrofit Accreditation Scheme.
- The Australian Sustainable Built Environment Council will advocate for tax incentives for energy efficient building retrofits and a national white certificate scheme.
- Private building owners, such as Positive Energy Places, will showcase positive-energy building examples.
- Tertiary education institutions, including RMIT and the University of Melbourne will continue to take a leadership role to reduce emissions through innovative research, academic programs and significant infrastructure upgrades.
- Utility, corporate and manufacturing companies, including Melbourne Water, will implement best business practice to meet ambitious emissions reductions targets.

- Leading businesses, such as the National Australia Bank, will work towards or have already achieved carbon neutrality.
- Environment Victoria will work with others to measure precinct performance using the One Planet Living tool.

What else needs to happen:

- More regulation and market mechanisms to overcome split incentives for new build, shared spaces and common property building retrofits.
- Energy efficiency performance levels to be mandatory for existing commercial buildings.
- NABERS to be mandatory for shared spaces and common property in smaller city commercial buildings, including reviews every two years.
- Government legislation that enables Victorian councils to deliver Environmental Upgrade Agreements that provide access to finance for building retrofits.
- An expansion of the Energy Saver Incentive Scheme to include large sites and also accredit heating, ventilation and cooling technologies.
- An expansion of the Commercial Building Disclosure Program to require disclosure by more sites.



RESIDENTIAL BUILDINGS

As the city’s population and density grows rapidly, City of Melbourne will offer cost effective and efficient solutions to reduce emissions in residential buildings across the municipality.

Target

- City of Melbourne will establish a baseline and develop a long-term target in the first year of the implementation plan.

The challenge

The municipality of Melbourne is currently experiencing rapid population growth, leading to a transformation of our residential sector. During the last two decades the population of the municipality has almost tripled, increasing from 35,000 in 1991 to over 100,000 in 2011. The city has also changed, shifting towards smaller households with one or two bedrooms, fewer children and higher incomes.

The apartment building boom has meant that 93 per cent of new homes built between 2006 and 2012 were apartments.

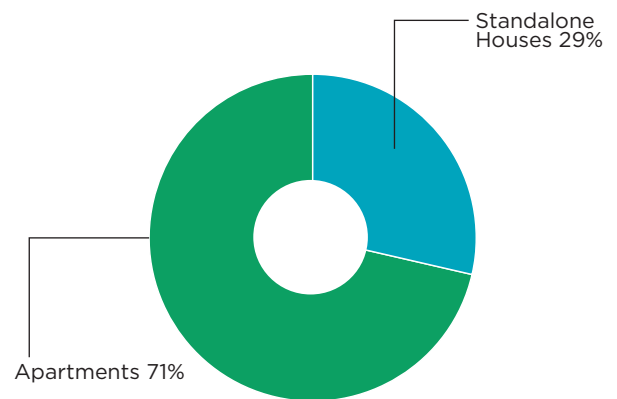
The environmental performance of many new homes built in the municipality of Melbourne has significant room for improvement, most notably in the high-rise apartment sector.

High-rise apartments have been shown to be the most energy intensive dwelling type, due in large part to the energy consumption of shared services and common property such as hallway and car park lighting, ventilation and pool and heating pumps. A key challenge is to achieve the largest reduction in emissions for the least cost by encouraging energy efficient retrofits in apartment building common areas as well as within the apartments themselves.

Making change within an apartment building’s owners corporation can be complex and each building is unique in its physical and human elements. Apartment residents, managers and owners need tailored assistance and long lead times to create change. High upfront costs and limited access to finance for retrofits can impede change, as well as overcoming a split incentive between property owners and tenants.

% OF TOTAL, 2010-11 ESTIMATES

100% = 620 ktCO₂-e*



*Total estimated emissions in 2010-11 using ClimateWorks model (but City of Melbourne’s emissions intensity for electricity), which differ slightly from City of Melbourne’s estimates



Proposed approach

City of Melbourne will bring together multiple parties to develop convenient, affordable and accessible solutions for reducing emissions from people’s homes.

City of Melbourne will continue to:

- Implement the *Energy, Water and Waste Efficiency Planning Policy* to apply specific industry-recognised standards in new buildings.
- Support the implementation of Smart Blocks, a national program helping apartment owners and their managers to improve the energy efficiency of common property in apartment buildings.
- Promote programs such as Positive Charge, a not-for-profit service which partners with local councils to provide expert advice to help both residents and businesses save energy. The service also offers access to discounted energy saving products, such as solar, LED lighting and insulation.

City of Melbourne will also:

- Incorporate environmental design considerations into relevant urban planning guidelines, policies and provisions – including design strategies to reduce peak energy demand and greenhouse gas emissions and to support renewable energy systems.
- Explore incentives for the improved environmental performance of residential buildings.
- Develop communication strategies for residents and owners on the benefits of environmental retrofits.
- Embed waste management and resource recovery in our engagement programs for building owners and tenants.
- Conduct apartment building research to assist in the development of tools, like NABERS, to rate a building’s environmental performance.
- Perform market research to identify opportunities to improve our sustainability services.

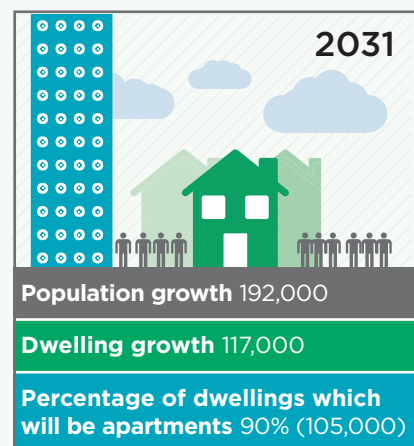
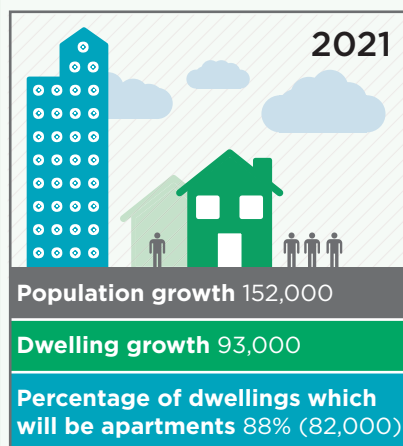
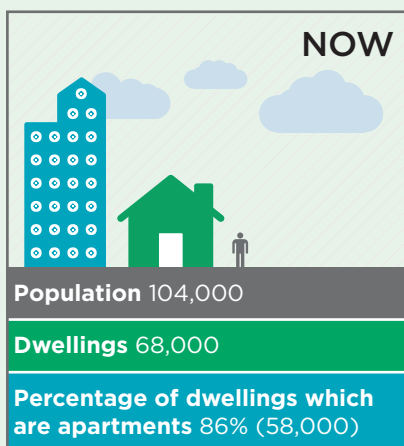
What others will do:

- Real estate agents, such as LJ Hooker, will develop a training program on sustainability in buildings.
- The Sustainable Melbourne Fund will provide attractive financing to owners corporations to implement environmental improvements.
- Strata Community Australia and partners will evolve Smart Blocks to become commercially viable and more accessible.

What else needs to happen:

- Amendments to legislation to incentivise owners corporations to support environmental initiatives.
- Development of a NABERS rating tool for apartment buildings.
- Implementation of a scheme mandating environmental performance ratings for large residential buildings.
- Improvements to Australian building codes to ensure all new construction meets a high standard.
- Development of a business case for consumer-led high-rise construction.
- Increased rebates for environmental products, including lighting.
- Development of solutions to overcome financial barriers to tenant investment in environmental retrofits.
- Residential owners corporation template rules to be developed with Consumer Affairs Victoria to support best practice energy efficiency.

PROJECTED POPULATION AND DWELLING GROWTH FOR THE MUNICIPALITY OF MELBOURNE



*BASED ON 2012 BASELINE

STATIONARY ENERGY SUPPLY

In order to achieve zero net emissions we must change the source of our stationary energy supply, ultimately using 100 per cent renewable energy within the municipality.

Target

- 25 per cent of electricity from renewable sources by 2018.

The challenge

To become a zero net emissions city the carbon intensity of our electricity supply must be substantially decreased. The Victorian electricity grid currently provides electricity, primarily sourced from brown coal, to Melbourne's businesses and households. Victoria's grid supply is the most emissions intensive in Australia.

Research has shown that the municipality of Melbourne can achieve reductions by changing supply sources. By switching 25 per cent of our current grid supplied electricity to low or zero emissions energy sources we could achieve a 10 per cent emissions reduction. While we have set an objective to obtain 25 per cent of our electricity from renewable sources by 2018, we are committed to working with key partners to drive transformational change to our stationary energy supply up until 2018 and beyond.

Challenges impacting the uptake of environmentally friendly approaches to our stationary energy supply include substantial uncertainty around future economics including the price of carbon, natural gas and grid energy. Key barriers to adopting innovative energy solutions include the installation and capital costs of infrastructure and regulatory frameworks, including selling electricity across property boundaries. Lack of demand for renewable energy has meant that there are a large number of approved renewable energy facilities that are not being developed.

Distributed generation of energy ensures a more resilient and diversified system. In many circumstances, developing energy from low emissions sources for a district is more efficient than producing energy for a single building. District energy solutions will be part of Melbourne's journey to becoming a zero net emissions city.

Stationary energy refers to all electricity and gas used for stationary purposes (non-transport) within the municipality.

Proposed approach

City of Melbourne will bring together multiple parties to develop solutions to barriers. Below are the actions that need to be undertaken to help make Melbourne a zero net emissions city.

The electricity grid

What City of Melbourne will do:

We will develop a collaborative relationship with CitiPower to design and deliver an energy management and supply system for the municipality of Melbourne that:

- Meets the community needs and expectations for energy supply.
- Is safe and secure.
- Is managed and delivered economically and environmentally efficiently.
- Minimises greenhouse gas emissions.
- Supports Melbourne as a prosperous city and premier business location
- Responds to future demands, challenges and changes.

What others will do:

- Not-for-profit groups, such as Environment Victoria, will continue to advocate for the closure of coal-fired power stations and the creation of renewable energy plants.
- Companies will be driven by Australia's Renewable Energy Target of 20 per cent by 2020, to supply more renewable energy to Victoria's grid.

What else needs to happen:

- Reduced Victorian reliance on brown coal as the primary source of emissions, through increased power plant efficiency and retirement of inefficient plants.
- Increased use of smart grids that use information technology to collect data on electricity use and supply in order to improve the efficiency of production and distribution.
- Improvements to the electricity grid to enable greater distributed generation capacity.

Renewable energy

City of Melbourne will deliver a renewable energy program that will:

- Promote solutions for commercial and residential renewable energy that increase accessibility and affordability.
- Provide guidance about navigating planning requirements for renewable energy installation.
- Explore financial models to encourage uptake of renewable energy.
- Facilitate community-owned solar projects on large commercial or institutional roofs.
- In partnership with the Sustainable Melbourne Fund, explore initiatives to increase the demand for the development of large-scale renewable facilities including wind and solar.
- Enable and encourage use of renewable energy through planning policies, strategies, structure plans and in new developments.

What others will do:

- The solar industry companies, such as Ingenero and Energy Matters, will create attractive finance models, such as solar leasing, for commercial buildings.

What else needs to happen:

- Removal of regulatory and process barriers for connecting renewable energy to the grid.
- A decrease in the cost of renewable energy to allow large-scale installations on commercial buildings.
- A revision of the planning scheme to simplify the approval process for installations.

DISTRICT ENERGY

District energy involves distributing locally generated energy to a defined district. It is used for residential, industrial and commercial requirements such as electricity, heating and water heating. A range of fuels including fossil fuels, renewables, or a combination of both can fuel district energy systems. City of Melbourne has a preference for encouraging district energy systems that are fuelled by renewable sources.

District or distributed energy solutions

City of Melbourne will continue to:

- Develop an energy map that outlines the municipality's current usage and identifies opportunities for increased efficiency, distributed renewable and district energy systems.

City of Melbourne will also:

- Develop and promote case studies on best practice for Melbourne businesses.
- In partnership with large property owners, facilitate communication within the energy sector about how to overcome barriers to increased use of renewable energy and decentralised supply.
- Explore waste-to-energy solutions, in partnership with key players and industry.

What others will do:

- The Energy Efficiency Council will implement the Integrated Energy Efficiency Retrofit Accreditation Scheme.
- Energy services companies, such as Cofley Australia and Cogent Energy, will explore the opportunity for delivering district energy solutions.

What else needs to happen:

- A review of building rating schemes to encourage cogeneration, district and distributed energy solutions.
- Property developers and building owners need to explore district energy solutions.
- Development of financial and regulatory incentives for district energy.
- Removal of barriers preventing electricity being sold across property boundaries.
- Regulations need to evolve to align with the new ways we use and source energy.

Supporting new technologies

City of Melbourne will continue to:

- Facilitate relationships between institutions to co-create and develop low carbon solutions.

City of Melbourne will also:

- Develop and promote case studies on innovative new technologies.
- Facilitate peer-to-peer learning and collaboration between different stakeholders on projects.
- Work with others to support research into and development of innovative clean energy solutions.

DISTRIBUTED GENERATION:

Energy obtained from a collection of sources. Distributed energy systems can include a range of fuel sources including fossil fuels, renewables, or a combination of both. City of Melbourne has a preference for encouraging renewable sources.

TRANSPORT AND FREIGHT

Melbourne will have a well-designed, energy efficient freight and transport system. Public transport, walking and cycling will be the predominant local modes of inner urban travel.

Target

- Increase the percentage of all trips to and from the municipality of Melbourne using sustainable transport from 51 per cent in 2009 to 60 per cent by 2018.

The challenge

Making our transport more environmentally sustainable is an important step towards zero net emissions.

Increasing the number of people using public transport, instead of driving private vehicles, is also vital to reducing the municipality's greenhouse gas emissions. Concerns about reliability, safety and the comfort of public transport are key barriers to be addressed.

Encouraging the uptake of new vehicles with improved environmental performance is another challenge, with research revealing that many vehicle purchasers often prioritise characteristics such as size and appearance over energy efficiency.

Improvements to air quality and reduced traffic congestion along with the associated health benefits of walking and cycling are key incentives for changing the way Melburnians currently use transport.

Proposed approach

City of Melbourne will bring together multiple parties to develop solutions enabling people to move easily, safely and comfortably using environmentally sustainable transport, and to ensure the city's private transport network complements the public system.

As part of our *Transport Strategy 2012* City of Melbourne will continue to:

Improve infrastructure

- Roll out green asphalt for road and footpath construction and investigate other sustainable options.
- Develop policies giving pedestrians priority in central city areas.

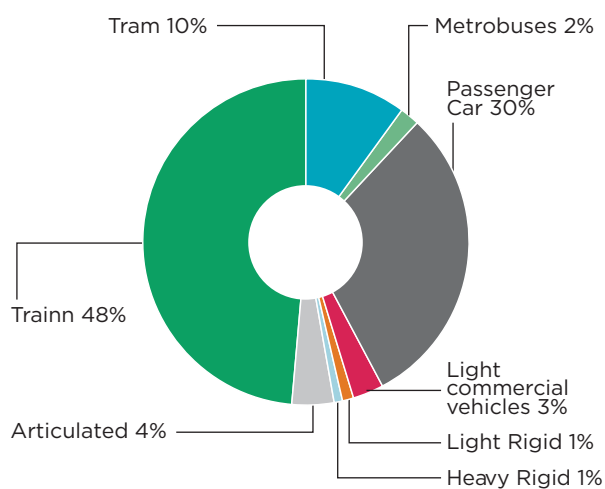
City of Melbourne will also:

Improve infrastructure

- Implement our *Bicycle Plan 2012-16* to deliver a connected cycling network, increase participation in cycling, and make cycling safer. We will also continue to build separated bike lanes in the central city.
- Develop a walking plan to improve the municipality's walking environment to and around current and future train, tram and bus stations and stops.

% OF TOTAL, 2010-11 ESTIMATES

100% = 921 ktCO₂-e



Melbourne is Victoria's transport hub
Over 800,000 people travel to and around the central Melbourne city area each day.

SUSTAINABLE TRANSPORT

Sustainable transport refers to use of public transport, walking and cycling.

Improve freight practices

- Create incentives for Melburnians to grow, eat and consume locally in line with our *Food Policy 2012*.
- Work with others to develop options for improving freight efficiency in the central city area.
- Encourage low emissions delivery systems.

Support community

- Partner with others to educate the community on the benefits of choosing sustainable transport.
- Develop and promote vehicle-sharing initiatives.

Research

- Undertake research to better quantify and understand emissions associated with freight transport.
- Enhance the evidence base on optimum transport and movement approaches in growth areas to minimise greenhouse gas emissions.

Corporate fleet

- Lead by example through incorporating more efficient vehicles into our fleet, and by investigating procuring vehicles run on new and emerging sustainable technologies

What others will do:

- The Victorian Government will prioritise increasing the capacity for more rail trips into the central city area by implementing the Metro Rail Capacity Project. The project involves the construction of a nine-kilometre rail tunnel through inner Melbourne including five new underground stations.
- The Victorian Government will work to implement the findings from its electric vehicle trial.
- Metro Trains will continue to investigate energy efficiency opportunities to reduce emissions in the operation of the rail network.

What else needs to happen:

- Public transport to be operated using renewable or no emissions energy sources.
- Preferential treatment to be given to low emissions taxis, cars and freight vehicles.
- Freight industry to transition to low emissions vehicles and fuels systems.
- Goods to be sourced from local producers where appropriate to minimise freight travel distance.



WASTE MANAGEMENT

City of Melbourne will work to minimise the municipality’s waste through planning and innovative solutions.

Targets

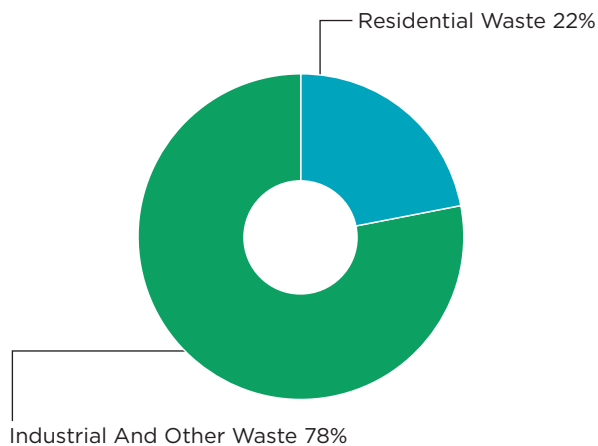
- Decrease waste to landfill per resident by 5 per cent by 2018.
- City of Melbourne to trial seven precinct waste solutions by 2018.

The challenge

If current trends continue, the municipality of Melbourne is expected to send approximately 208,000 tonnes of waste to landfill by 2020 – 84,000 tonnes more than the city produces today.

% OF TOTAL, 2010-11 ESTIMATES

100% = 137 ktCO₂-e



Around 80 per cent of the municipality’s waste comes from the commercial and industrial sector, with the remainder from households and street waste. When waste with any organic composition is sent to landfill, it creates methane emissions for decades as the material decomposes.

Commercial waste is a major challenge as its collection in the city is highly fragmented, with around 40 private waste collection businesses operating alongside municipal services. There is a significant lack of recycling and organic waste recovery as well as widespread illegal dumping.

In high-density living, the lack of shared composting facilities means that organic food waste often ends up in landfills. Increasing understanding within the community about how to separate waste for recycling is also an on-going challenge.

Proposed approach

City of Melbourne will work with businesses, residents, government and the waste management sector to manage waste more efficiently.

City of Melbourne has already made improvements to commercial waste management collection and disposal through its precinct-based programs. These include the use of waste compactors, the Degraeves Street Recycling Facility and the Love your Laneway program.

City of Melbourne will continue to:

- Review, update and implement our Integrated Waste Management Program, to maximise diversion of waste from landfill and reduce greenhouse gas emissions.

Waste generation

- Work in partnership with the Victorian Government and businesses to enhance measurement and reporting of sustainable procurement, waste generation, composition and resource recovery trends.

Waste separation and collection

- Trial local precinct solutions that improve resource recovery through behaviour change and technology.
- Improve waste separation and collection within council operations.
- Work with high-rise apartment owners and managers to provide appropriate on site recycling and waste management facilities.
- Collaborate with the Victorian Government and business to encourage the establishment of more efficient waste collection systems for existing, new and redevelopment areas.
- Increase support to programs that reduce the amount of waste going to landfill and improve commercial recycling rates.
- Trial incentive programs to improve residential recycling rates.

Waste treatment

- Trial waste treatment technologies within local precincts and showcase alternatives.

City of Melbourne will also:

Waste separation and collection

- Implement resource efficiency behaviour change programs targeting residents and the commercial sector.
- Identify optimum waste separation methodologies for residential and commercial sectors.

Waste treatment

- Work with the Metropolitan Waste Management Group, councils, developers and building owners to develop alternatives to landfill disposal.
- Explore waste-to-energy solutions, in partnership with key players and industry.

Research

- Research options to address commercial waste streams with no current recycling infrastructure available (for example office and retail tenancy fit-outs).
- Research the greenhouse impacts of different waste separation and treatment approaches for residential and commercial sectors.

What others will do:

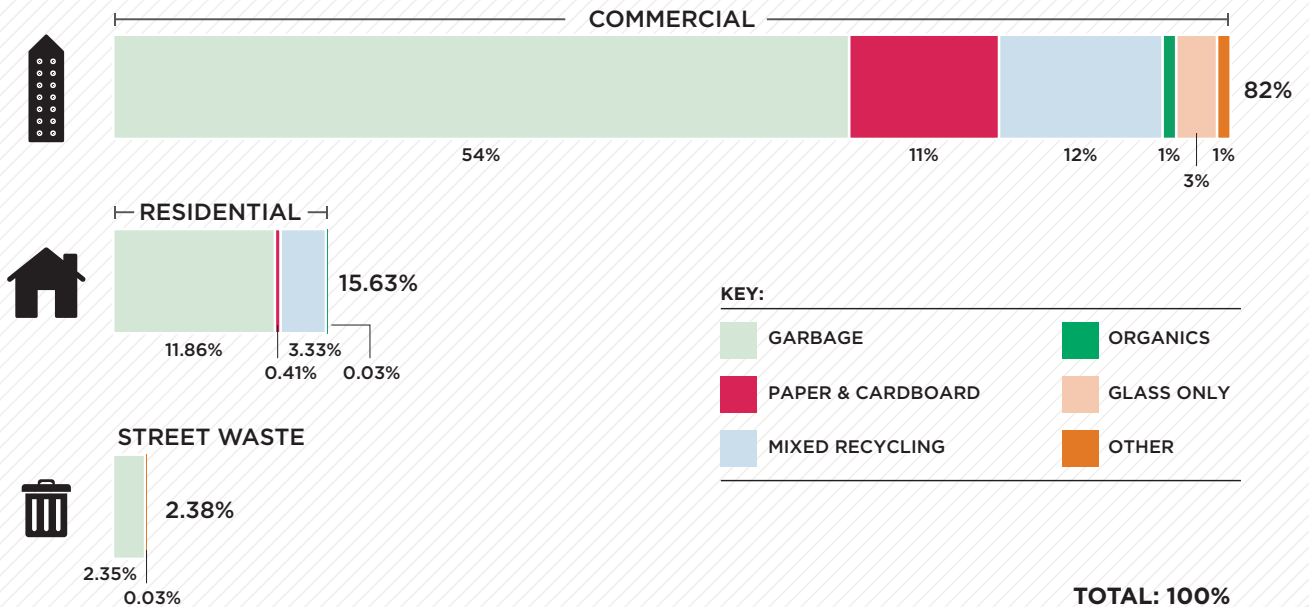
The Victorian Government has released *Getting Full Value: the Victorian Waste and Resource Recovery Policy 2013*, which sets a vision and approach to position Victoria as a national leader in resource recovery. The policy's vision is an integrated, statewide waste management and resource recovery system that provides an essential community service by protecting the environment and public health, maximising the productive value of resources and minimising long-term costs to households, industry and government.

The policy sets six key goals for Victoria to:

- Assist Victorians to reduce the waste they generate and save Victorian's money through efficient use of resources.
- Facilitate strong markets for recovered resources.
- Facilitate a Victorian waste and resource recovery system that maximises the economic value of waste.
- Reduce the environmental and public health impacts of waste.
- Reduce illegal dumping and littering.
- Reform and strengthen the way institutions work and are governed to effectively implement Victorian Government policy.



2012-13 LANDFILL AND RECYCLING COMPOSITION FOR THE MUNICIPALITY OF MELBOURNE (BROKEN DOWN BY WASTE STREAM)



What else needs to happen:

Waste generation

- All members of the community need to significantly reduce the quantity of waste generated.
- Financial markets need to develop, resulting in all materials being recycled or reclaimed, and no waste being sent to landfill.
- Products need to be designed for reuse and recycling.

Waste separation and collection

- Low emissions collection systems need to be developed for existing and new developments.
- Organic waste to sewer to be further explored as an alternative to sending organic waste to landfill.
- Victorian Government to ban unprocessed organic waste being used as landfill.

Waste treatment

- Innovative technologies to treat waste need to be identified and adopted on an ongoing basis.

How to contact the City of Melbourne

Online: melbourne.vic.gov.au

Telephone: 03 9658 9658

7.30am to 6pm, Monday to Friday

(Public holidays excluded)

Translation services

03 9280 0716	አማርኛ
03 9280 0717	廣東話
03 9280 0718	Ελληνικά
03 9280 0719	Bahasa Indonesia
03 9280 0720	Italiano
03 9280 0721	國語
03 9280 0722	Soomaali
03 9280 0723	Español
03 9280 0724	Türkçe
03 9280 0725	Việt Ngữ
03 9280 0726	All other languages

National Relay Service: If you are deaf,

hearing impaired or speech impaired,

call us via the National Relay Service:

Teletypewriter (TTY) users phone

1300 555 727 then ask for

03 9658 9658

9am to 5pm, Monday to Friday

(Public holidays excluded)

In person

Melbourne Town Hall

Administration Building

120 Swanston Street, Melbourne

7.30am to 5pm, Monday to Friday

(Public holidays excluded)

In writing

City of Melbourne

GPO Box 1603

Melbourne VIC 3001



CITY OF MELBOURNE

COMMUNITY CONSULTATION REPORT

**City of Melbourne
Draft Zero Net Emissions Strategy**

October - November 2013

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1. Introduction

1.1. Purpose

The purpose of this document is to outline the community and stakeholder engagement approach taken by City of Melbourne to obtain feedback on the draft Zero Net Emissions Strategy in October and November 2013. This document outlines the feedback received and City of Melbourne's response to each item.

1.2. Background

City of Melbourne released its initial Zero Net Emissions Strategy in 2003, which outlined Melbourne's commitment to becoming a carbon neutral city by 2020. The third edition of the Zero Net Emissions Strategy sets out our approach to reducing GHG emissions across the municipality from 2014-2018. The Strategy was developed in collaboration with over fifty key stakeholders and individuals, and outlines how we plan to work together to achieve effective and lasting GHG emissions reductions across the municipality.

The Strategy builds on previous successes and outlines City of Melbourne's approach to managing greenhouse gas emissions from council operations, commercial buildings, residential buildings, transport systems, energy systems and waste management over the next four years.

1.3. Overview of consultation process

Council endorsed the Draft Zero Net Emissions Strategy for consultation on 1st October 2013. The Strategy subsequently became available for public consultation from 2nd October 2013 until 13th November 2013.

Community Consultation October - November 2013

Purpose:

- To guide people to the Participate Melbourne website where they were able to comment and provide feedback on the draft strategies
- To raise awareness and excitement about the two strategies

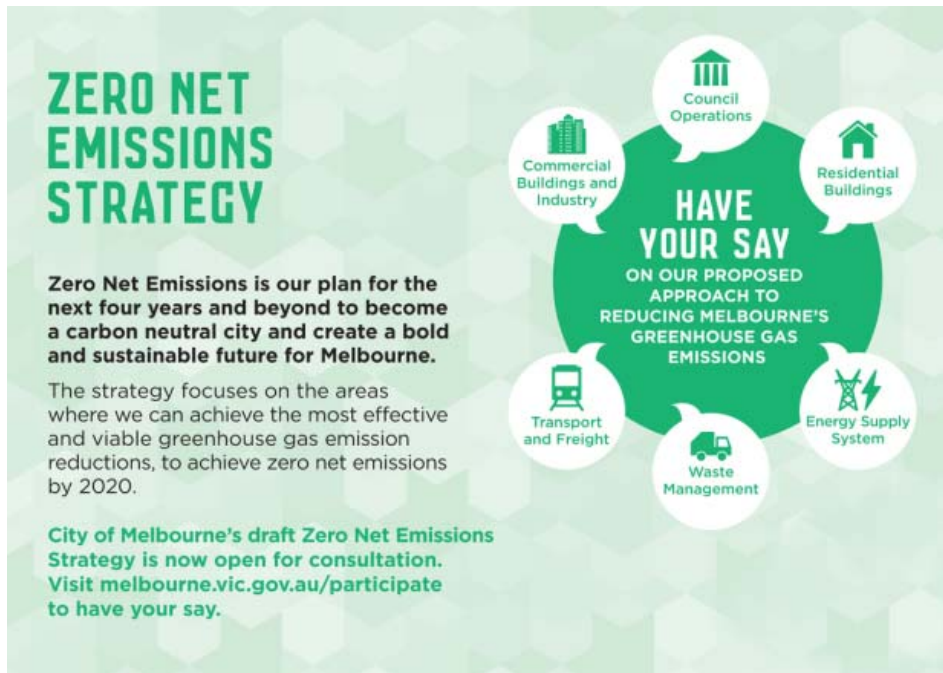
Actions:

- External reference group meeting
- Key stakeholder workshop
- 10 one-on-one key stakeholder meetings
- Community engagement pop up events and post card hand out's at 7 locations across Melbourne

Communication and Advertising:

The following communication and advertising actions were used to promote the Zero Net Emissions Strategy Community Consultation and pop up events:

- Email send to 40 Community Organisations and Resident Groups
- Email sent to 69 key stakeholder organisations
- Community radio ads on RRR and PSB, run throughout October during drive time and breakfast
- Social media advertising campaign
- Over 800 specially designed seeded postcards to promote the consultation period were distributed throughout inner Melbourne (see below).
- City of Melbourne call centre hold message run throughout October
- Posters displayed at City of Melbourne Libraries and Community Centres
- What's On website and Facebook page
- City of Melbourne corporate Facebook, Twitter and google+ posts throughout October
- City of Melbourne corporate website homepage tiles were run for two weeks in October to promote
- Enterprise Melbourne homepage tiles to promote were run for two weeks in October to promote
- Melbourne News article in October edition – circulation of approximately 60,000
- Inclusion in City of Melbourne's corporate ad 9 October edition (ran in three publications: Melbourne Weekly Times, Stonington Leader and Weekly Review)
- City of Melbourne's Green Leaflet Newsletter – circulation of approximately 1,500
- Enterprise Melbourne newsletter – October edition - circulation of approximately 1000
- City of Melbourne's Libraries newsletter – October edition – circulation of approximately 19,000
- Docklands Hub Community Newsletter



Community engagement pop up events:

Pop up Description

To attract community attention and guide people to the Participate Melbourne website a number of pop up events took place across inner Melbourne.

The pop up activity featured a life-size snakes and ladders style game board; a positive emissions or water outcome progressed players up the board (ladders) and a negative emissions or water outcome took players back down the board (snakes).

Pop up Attendance

It is estimated that over 1500 community members attended community consultation pop up events across inner Melbourne.

Pop Up Locations

Spring Fling Community Festival Errol Street, North Melbourne

Date: Sunday 20th October 2013

Audience: Residents



Queens Bridge Square - South Bank

Date: Thursday 24th October 2013

Audience: Workers, commuters



Garage Sale Trail Event - Carlton

Date: Thursday 24th October 2013

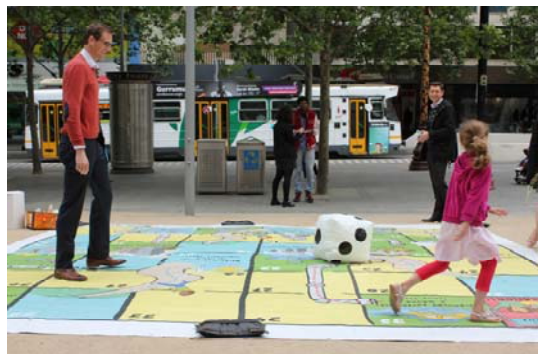
Audience: Residents



City Square - Melbourne

Date: Wednesday 30th October 2013

Audience: Workers, residents, commuters



Docklands Community Hub

Date: Friday 1st November 2013

Audience: Workers, resident

In addition to 5 pop up events, community engagement via post card handouts was undertaken in Kensington (Thursday 31st October 2013) and on Spenser Street, Melbourne (Friday 1st November 2013).



Website Submissions:

A Participate Melbourne website was created to provide an online forum for the duration of the consultation period and was open to all members of the community. The website enabled the community to read the draft strategies, contribute to a forum discussion and provide feedback on a specific section of the draft strategy through feedback forms.

The Participate Melbourne website received:

- 3,166 individual site visitors
- 8 forum comments
- 15 feedback submissions
- 6 comment likes
- 976 visits to the draft strategy document library
- 275 downloads of the Strategy
- 104 downloads of the Infographic



Social Media Advertising Campaign Outcomes:

The social media advertising campaign also received a strong response from community members.

Social media advertising campaign resulting in:

- 2040 'likes' during the campaign
- 6346 click throughs to online engagement hub Participate Melbourne.
- 305,718 impressions on Facebook (potential people who saw the ad in their feed).



2. Outcomes

2.1. Summary of Feedback

Feedback revealed that the community predominantly supports the Strategy. The Strategy has been revised to reflect feedback received during the consultation period where appropriate. Key feedback included the need for a greater focus on industrial emissions, a clear long term renewables target and clearer articulation of the role the implementation plan will have.

2.2. Resulting Amendments to the Strategy

The Strategy has been revised to reflect feedback received during the consultation period. The following table provides details of what sections have been revised and the extent of those revisions:

Table 1: Summary of revisions

Strategy Section	Comments/ amendments
1. City of Melbourne's Approach	<p>Section title changed to 'strategy snap shot'</p> <p>The role of the implementation plan more clearly outlined</p> <p>'Barriers' included as a consideration in our project prioritisation approach</p>
2. Our Progress	Minor wording changes
3. Melbourne's emissions profile	<p>Included commitment to quantify refrigerant emissions</p> <p>Minor wording changes</p>
4. Council operations	<p>Separated into two sections; council operations and leadership</p> <p>Included financial supply chain impacts</p> <p>Updated reference to <i>City of Melbourne Street Lighting Strategy</i></p>

	Minor wording changes
5. Commercial buildings and industry	Enhanced industry in section Minor wording changes
6. Residential buildings	Minor wording changes
7. Energy systems	Include vision to move towards 100% renewable energy Energy target changed to '25% of electricity from renewable sources' rather than 25% of energy Make clearer district solutions do not need to be gas based Waste to energy considerations included Minor wording changes
8. Transport	The term 'low emissions transport' changed to 'sustainable transport' Minor wording changes
9. Waste management	Waste minimisation included Minor wording changes

a. Comments and submissions

The following section provides an overview of the comments made on the website, either submitted directly or via the forum. Comments have been abbreviated in some instances and they have attributed to the public usernames that were published on the site. Anything not regarded as direct feedback specifically on the strategy has not been included – this includes general conversation on the site and general commentary on other people’s postings.

Comments have been categorised, based on reoccurring themes, into the following sub-headings:

- Endorsements
- General comments
- Commercial buildings
- Residential buildings
- Energy systems
- Transport
- Waste

i. Endorsements

No.	Submitter/Username	Summary of comments
1.	Username: Wishy	Brilliant! Unbelievably, this is the first I've heard about this stuff (unbelievable because I'm studying this stuff at the moment). Would love to get involved.
2.	Username: Tim Edwards	The overall approach is excellent - congratulations for being through and thoughtful
3.	Username: Sammy	I love the rationalized and prioritized approach to what can get the biggest bang for buck. Good job. It removes the emotion and pet projects out of the equation.

ii. General Comments

No.	Summary of comments	Response
4.	<p>Username: Tim Edwards - President Australian Refrigeration Association - Tel 0405324834</p> <p>On the profile for the City of Melbourne emissions you show refrigerants as zero. This is not possible. I would be happy to explain why it is not and why it matters that you take it into consideration.</p> <p>You have not, as near as I can tell addressed refrigeration sufficiently. HVAC also warrants great emphasis in all sectors: commercial, industrial, residential</p>	<p>Addressed-</p> <p>A commitment to work on quantifying GHG emissions associated with refrigerant leakage will be incorporated into the Strategy.</p>
5.	<p>Username: Inner Westie</p> <p>I'm surprised that the Zero Net Emissions Strategy is sticking to energy solutions. It would be great to see more on sequestration and drawdown solutions for greenhouse - interlinking with the urban forestry, soil, wetland and seagrass options. This more holistic approach will tie better with the integrated water management solutions and improve liveability. As a 'neighbour' it would also be great to see more regional partnerships for projects and advocacy.</p>	<p>Noted- City of Melbourne is taking significant steps to enhance our urban forest (see https://www.melbourne.vic.gov.au/Sustainability/UrbanForest).</p> <p>While our urban forest is expected to sequester around 22,000 tonnes per year of Co2e per year. City of Melbourne considers this work to be part of its role as Council and therefore does not deduct the reduction off our GHG emissions inventory.</p>
6.	<p>Username: Sal</p> <p>The zero net emissions strategy I think is a step in the right direction and it seems that the Council have worked through the different focus areas where the greatest impact on emission reductions can occur. The one thing that I though came through strongly in this draft was the need to work together as this issue affects us all and it is not one person or organisations responsibility, it is all of ours. I would like to see more emphasis placed on commercial buildings and industry as I believe they are a huge contributing factor to our GH gas emissions.</p>	<p>Noted- City of Melbourne recognises the importance in working with other organisations and the community to achieve progress. Commercial buildings are one of the most significant opportunities to reduce GHG emissions in Melbourne, and is therefore a significant component of this strategy.</p> <p>Addressed-</p> <p>The industry section of this strategy has been enhanced.</p>
7.	<p>Username: Simone</p> <p>Fantastic keep pushing it! Unfortunately, the State Govt controls so much of the legislation that needs to change to compel the private sphere into action. I would encourage Melbourne City Council to be very vocal where and when the State Govt is holding back progress. MCC has a lot of credibility and Melbourne's livability is largely due to council. Do not be backwards in coming forwards about progress and change. State govts are hopelessly conservative regardless of 'their stripes'.</p>	<p>Noted- The City of Melbourne aims to work collaboratively with the Victorian State Government, where possible, to achieve emissions reductions in our municipality.</p>

No.	Summary of comments	Response
8.	<p>Username: Sammy</p> <p>Needs a long term (50 year) vision. Not sure where we are heading. Obviously it has to be zero emissions. This would be good to state. Even from an economic point of view it makes sense to get our energy from the sun which has no ongoing costs like coal and petrol energy sources do.</p> <p>I would definitely pay to ensure I was carbon neutral. Like the carbon offsets or flights, I'd pay extra to know this was championing the cause. Because I can't do much on my own, but want to support the council who can</p>	<p>Addressed- We have included a vision to move towards 100% renewable energy.</p>

iii. Council Operations

No.	Summary of comments	Response
9.	<p>Username: Michael Pulsford</p> <p>Overall I think the Strategy is strong and well thought-through. One thing which is missing is consideration of the emissions profile of Council's finances, however. Council has, as I understand it, deposits with each of the 'big four' Australian banks; these banks lend large amounts to fossil fuel projects, as is partly detailed in the Market Forces report 'Financing Reef Destruction'. This could be easily reduced by moving money into smaller banks and/or those which, like MECU, explicitly preclude investment in fossil fuels.</p>	<p>Addressed- Wording changed to include financial supply chain impacts.</p>

iv. Commercial Buildings

No.	Summary of comments	Response
10.	<p>Username: David Watkins Ecosave 0457842094</p> <p>Dear Sir/Madam, I would like to see a way for building owners or tenants to contact reputable contractors / consultants in order for them to make a credible choice for retrofitting their buildings. In the industry we find that one of the key hurdles is that individuals do not know where to turn to when contemplating a retrofit path. As such can make a rash decision which can lead to inferior technology or go down the least path of resistance such as just lighting whilst missing out on bigger co2 reduction opportunities which could have been paid off with a single blended project. I / we would like to see the council as a mediator in preselecting a panel of credible suppliers / contractors / consultants who can create assurance of quality, delivery and guarantees of service and co2 savings. Allowing end users to make a valued judgement whilst still maintaining their purchasing protocols A model such as the DTF GGB program has done this, so a similar portal would not create an issue to the council. If you wish to discuss this matter further with me please feel free. Best Regards David Watkins Ecosave 0457842094</p>	<p>Noted - Others already fill this role (EEC, SV, CWW) CoM will work to support these organisations and fill the gaps where appropriate.</p>
11.	<p>Username: Sammy</p> <p>Not sure about the building regulations idea as I'm not an expert on the impacts. But definitely think it should be the role of the council to report on every efficiency across the city. Name and shame the bad performers and encourage them to do better. This would be powerful.</p>	<p>Noted - NABERS, BEEC, CBDP programs all assess performance. NABERS and CBD are publically available. CoM will work to support these organisations and promote best practice.</p> <p>Further details will be outlined in the implementation plan.</p>
12.	<p>Username: Tim Edwards - Australian Refrigeration Association</p> <p>It is important for the HVAC&R assessment to measure both direct and indirect emissions where direct is fluorocarbon refrigerant leakage and indirect is energy consumption. The recent publication Cold Hard Facts 2 shows how the total is at least 11.3% of national emissions. We can show that this in an under estimate. A more accurate estimate is 13/14%. In any case it is a high proportion of total emissions. Please contact the Australian Refrigeration Association to learn more about the opportunities for HVAC&R emissions reduction.</p>	<p>Addressed- 1200 Buildings program will focus on reducing energy GHG emissions associated with HVAC.</p> <p>A commitment to work on quantifying GHG emissions associated with refrigerant leakage will be incorporated into the Strategy.</p>

13.	<p>Username: stvensonlinda</p> <p>In addition to the feedback I provided at the Stakeholder Workshop. The wording around the tertiary sector in the 'What others will do' section should be more inclusive. For example suggested text would be 'Tertiary Education Institutions, including RMIT and the University of Melbourne as major landholders in the City, are taking a leadership role to reduce emissions through innovative research, academic programs and significant infrastructure upgrades'.</p>	<p>Addressed- text to be changed as suggested.</p>
14.	<p>Username: Danny</p> <p>I'm told approx. 40% of carbon in the US is created by the building industry using concrete and steel. There is a movement towards CLT (cross laminated timber) worldwide. Sustainably harvested timber products reduce the carbon in the air when you swap them for high users of fossil fuel materials like concrete, steel and aluminium as they feed off carbon as they grow. CLT has proven to be as safe, lighter, cheaper, faster to build and reduce the carbon footprint. Surely we could give priority to CLT buildings over conventional concrete and steel where possible. While we're at it, swap energy to solar & wind. Increase parking availability to hybrids. implement policy to swap plastic products to plant based, biodegradable materials.</p>	<p>Addressed- comment to be included- CoM will support research and where possible incorporate research findings into our programs and activities. Leading by example, City of Melbourne is using CLT in its new Docklands Library building.</p>

v. Residential Buildings

No.	Summary of comments	Response
15.	<p>Username: Tim Edwards - Australian Refrigeration</p> <p>It is important to consider the direct and indirect emissions from HVAC&R where direct is refrigerant leakage and indirect is energy use. In the recent publication of Cold Hard Facts 2 the total is estimated to be 11.3% of national emissions. We consider this an under estimate. The total is more like 13/14%. Please contact the Australian Refrigeration for more information.</p>	<p>Addressed- Smart Blocks Programs will help reduce emissions from energy use.</p> <p>A commitment to work on quantifying GHG emissions associated with refrigerant leakage will be incorporated into the Strategy.</p>
16.	<p>Username: jmjra</p> <p>I have recently arrived from Europe and have been shocked by the standard of building in Victoria, specifically point cook and sanctuary lakes. for a new house to be this leaky is truly shocking. the solution, has to be a 'fabric first' approach, get the building fabric right, way before adding eco-bling such as solar. reduce the demand before addressing it. standards need to be enforced at the commissioning of buildings, not just at the planning stage. we personally intend to build our first passive house in the next year or two. the addition of solar to this low energy building will make for easily achieving net-zero. we will happily share information on the build, and it's subsequent performance once built. the more real, decent houses we can build, the better Victoria's future :)</p>	<p>Noted - CoM has limited control over the building standards. However we have released our energy, water ,waste planning policy. CoM works with ASBEC on their sustainable housing committee (along with the building commission).</p> <p>CoM has recently released its housing discussion paper, Future Living. A final housing strategy will be developed and released in 2014.</p>

No.	Summary of comments	Response
17.	<p>Username: Simone</p> <p>A focus on apartments built for owner occupiers is a must. Renters either can't or are not really interested in 'investing' in someone else's property for the long term. And investors certainly are not. Only the owner occupier cares to. Owner occupiers will also pay a premium for high quality building stock - including green building stock. Strategies to encourage developers to seek out this market rather than the 'investor' are a must. I am an owner of a single dwelling with a heritage overlay. Council should be using the limited levers it has to ensure developers are building the best quality buildings possible. 2) Council has a 'heritage expert' who decides on whether a building compromises 'heritage values'. When will council employ an expert in sustainable building to examine the merits of a building or extension? Environmental values should be at least as important as 'heritage.' As an owner of a D listed building I have found out the hard way that 'heritage' values trump green building everytime. While understandable, it is unfortunate that one set of values is always more important than another. A rethink on this is important since its 30% of housing stock. Most of this stock is owned by the occupants - the most likely people to invest in green design and building materials. The future does not lie in 1890s ideas about climate. The future for 'heritage' concepts should be about blending the old with the new in a more sophisticated manner than simply believing the two cannot be 'seen' in the same structure.</p>	<p>Noted- The Smart Blocks program provides advice/ tools and assistance to owner occupiers, as well as tenants and building managers.</p> <p>Noted – City of Melbourne has outlined its commitment to enhancing internal sustainable buildings knowledge and capacity to provide internal and external advice (<i>Council Operations Section</i>)</p>

vi. Energy Systems

No.	Summary of comments	Response
18.	<p>Username: Unknown</p> <p>Reading through the reports I am impressed, though there are a few areas in which I am not so sure about.</p> <p>Now district energy systems which would be based on natural gas cogen or trigen systems, here are some points I have about this:</p> <ul style="list-style-type: none"> - Firstly its predicted that natural gas will almost triple in price over the next few years. - Trigen/Cogen is only a short term solution as soon enough we're gonna have to generate all our power from renewable energy. 	<p>Addressed- make clear district solutions is not referring to gas, but can be based on renewables</p> <p>Addressed- explore initiatives to increase the demand for the development of large scale renewable facilities.</p>

No.	Summary of comments	Response
	<p>- There are over 4000Mw of wind farms approved in Vic alone, and they're saying (in AEMO's report) that some periods during low demand 100% of Vic's energy can be supplies by wind. Meaning cogen systems will then become the dirtiest source of energy in Vic at that time, and these systems will be right in the center of our city!</p> <p>- The purchase of green energy will do just fine! And with the amount of planned renewable generation there will be plenty to purchase. This may interest you guys, here are some live feeds of current electricity generated by wind: http://mistervint.com/?region=VIC And current electricity demand in Vic http://mystuff.gotdns.com/demand/</p> <p>Otherwise this plan is great for our city :D</p>	
19.	<p>Username: Unknown Politically promote More solar and wind power</p>	<p>Noted- the city of Melbourne has made a clear commitment to promote the increased uptake of renewable energy systems</p>
20.	<p>Username: John Handley Your draft document looks pretty good, very comprehensive. Many of the actions taken to date have shown good results, which is encouraging.</p> <p>Here are my suggestions:</p> <p>Sydney has implemented LED lighting that is saving a fortune in power costs and emissions. Have a chat to Clover Moore about what she's doing up there.</p> <p>http://www.cityofsydney.nsw.gov.au/council/news-and-updates/videos-podcasts/city-talks</p>	<p>Addressed -The City of Melbourne's street lighting strategy has been approved, outlining our approach to enhancing the environmental performance of street lighting in Melbourne.</p>
21.	<p>Username: Sammy We should be aiming for 59% renewable energy. 30% seems a bit week for a progressive western city. Sydney is beating us! I would have so much pride knowing that Melbourne is doing a heap and is leading the pack on emissions.</p> <p>I would argue that there are other reasons why you might take certain actions. Ie they are very good at raising awareness. For example wind turbines on st Vincent's hospital are visually stunning and leave a great impression that we are doing something about our energy. I support visually attractive projects to ensure the issue and solutions are tangible and people 'feel' that things are happening.</p> <p>The strategy should talk about the concept of decentralized energy network. That we should be making our own which would automatically reduce energy waste by not moving it far.</p>	<p>Addressed- Include a position of moving towards 100% renewable energy by 2030.</p> <p>Noted- City of Melbourne is taking a leadership position on renewable energy and aims to showcase key projects which engage the community. Local projects will be investigated through this process.</p>

vii. Transport

No.	Summary of comments	Response
22.	<p>Username: Kelly Hertzog</p> <p>Many businesses operate in the city with business models that require large fleets of vehicles. Could there be an action that aims to specifically engage these businesses to reduce their car use and change to more sustainable transport options? Engagement is the key, particularly for small business owners who are often not interested in environmental improvements. For example, tradesmen</p>	<p>Noted- City of Melbourne leads by example through enhancement in the efficiency of our fleet. See Council Operations section of ZNE.</p>
23.	<p>Username: Sammy</p> <p>Cars will always be needed in the city. So we can't ignore them. I like the focus on bikes and walking though. We should be pushing to have electric cars in the city and encourage them to be used by the council and for businesses who have workers traveling close to the city. This would be exciting and help Melbourne to get ahead of the curve in electric cars - which are more suited to city travel at the moment (ie low distances they can travel at the moment)</p>	<p>Noted- The main focus for moving people in the city is public transport, walking and cycling. The proportion of people coming into the city by car is declining.</p> <p>The City of Melbourne is working with the Victorian State Government on its electric vehicle trial by using electric vehicles in Council's fleet and assessing their performance.</p>
24.	<p>Username: Humanform</p> <p>The emphasis has to be on low carbon infrastructure, which means new rail lines for commuters, including a new Doncaster line and airport link. It also means improved rail access to Melbourne's ports to make high polluting projects like East West Link unnecessary. The Council must lobby hard to stop the East West Link, before it destroys essential parkland (a key ingredient to a green city.)</p> <p>Also bicycle safety on city roads must be improved. Bicycle paths shouldn't simply vanish when they become inconvenient, particularly around intersections.</p>	<p>Noted- On 27 August 2013 the Council resolved: <i>'given that the City of Melbourne does not yet have the data at hand to fully assess the East West Link, and given the need for further dialogue with LMA and the State Government, the City of Melbourne does not support the East West Link project as announced.'</i></p> <p>Noted - Actions to address this are outlined in City of Melbourne's Bike Plan. See: http://www.melbourne.vic.gov.au/AboutCouncil/PlansandPublications/strategies/Pages/Bikeplan.aspx</p>
25.	<p>Username: John Handley</p> <p>Your draft document looks pretty good, very comprehensive. Many of the actions taken to date have shown good results, which is encouraging.</p>	<p>Noted- Master Plans for localised areas are developed. It is intended that this area will be addressed through this</p>

No.	Summary of comments	Response
	<p>Here's my suggestions:</p> <p>1. Princes Bridge carries about 5% of all car traffic into the city. The Northbound bike lane has been a success, but my view is that this is a short-sighted approach to this area.</p> <p>Given the huge amount of people movements between Flinders St Station and Federation Square, as well as the flow of people up and down Swanston and St. Kilda Road to the Arts Precinct and Southbank, there really is no place nor space for motor vehicles.</p> <p>Princes Bridge should be restricted to trams, bicycles and pedestrians and as far along St. Kilda Rd. as Linlithgow Ave / Nolan St.</p> <p>The effect on traffic will be minimal, as vehicles will either re-route to Batman Ave. or Queens Rd., or make alternative arrangements to access the City.</p> <p>2. Bike parking in the City is oversubscribed. The Bike Pod at 202 Flinders Lane is a great initiative, but there are too few bike parking places available. Since it is possible to park approximately 8 bikes in the space of one car, a gradual conversion of car spaces to bike spaces increases the efficiency of providing vehicle parking for many more people.</p> <p>What about insisting that the other high-rise parking stations across Melbourne also implement a ratio of safe accessible bike parks as well?</p> <p>MCC has installed new bike parking across the City in general, but in areas such as near to RMIT bikes are locked to any object that is available including trees, and seats. I wouldn't be surprised to see someone lock a bike to a slow moving pedestrian one day! There needs to be increased bike parking and decreased car parking right across the City.</p> <p>St. Kilda Rd. is a major bike access route for cyclists. There needs to be a consistent, wide and safe bike lane the along the length of St. K. Rd. to encourage more cyclists along this route.</p> <p>There is still a great deal of work to be done in improving cycling infrastructure across the other access routes into the City as well. Linking Albert St and La Trobe St should be an immediate priority. Removing one car lane and some of the parking from Nicholson St along the Carlton Gardens area is also much needed. The current "shared path" on Nicholson is very unsafe for all users.</p>	<p>process.</p> <p>Noted- Actions to address this are outlined in City of Melbourne's Bike Plan. See: http://www.melbourne.vic.gov.au/About Council/PlansandPublications/strategies /Pages/Bikeplan.aspx</p> <p>Noted- The City of Melbourne's bike plan outlines our approach to increasing cycling facilities throughout the city. This includes expanding on-street bicycle parking including banks of parking rails and individual rails. Challenges in developing centralised bike facilities include cost and finding appropriate locations.</p> <p>Noted- Actions to address this are outlined in City of Melbourne's Bike Plan. See: http://www.melbourne.vic.gov.au/About Council/PlansandPublications/strategies /Pages/Bikeplan.aspx</p>

viii. Waste

No.	Summary of comments	Response
26.	<p>Username: Kelly Hertzog</p> <p>It would be great to see more ewaste recycling days and a greater public awareness of how to deal with this type of waste.</p> <p>As a resident in an apartment, about 80% of the waste that goes to landfill from my house is organic food waste. If I had access to some kind of shared composting facility it would dramatically reduce my contribution to landfill.</p> <p>Also, there is a lack of understanding in the community about how to separate waste for recycling. The recycle bins in my apartment building are always full of plastic bags and other items that can't be recycled. The services are there already but there is a lack of understanding. Perhaps education material should address linguistic and cultural differences of residents?</p>	<p>Noted- City of Melbourne host an annual e-waste recycling day in October. There are a number of other e-waste disposal opportunities, for more information please visit www.melbourne.vic.gov.au/waste</p> <p>Noted- This will be considered in the development of the implementation plan and our commitment to 'work with the Metropolitan Waste Management Group, councils, developers and building owners to develop alternatives to landfill disposal.'</p> <p>Noted- City of Melbourne runs a number of programs to address understanding and awareness. For more information about our current waste education programs please visit: www.melbourne.vic.gov.au/waste</p>
27.	<p>Username: Dave Somers</p> <p>While the Zero Net Emissions Strategy is a leap forward for strategic planning in Australia, it doesn't go into sufficient detail around the long-term opportunity to create energy from waste. The City of Melbourne currently only recycles ~25% of waste from the majority of residences, which is well below national targets. The implementation of a waste to energy system (or systems) would not only help increase recycling rates, but divert waste from landfill where it would create (an expensive) environmental issue.</p>	<p>Noted- This will be explored as part of the 'investigation into alternatives to landfill' action.</p> <p>Waste to energy is one of many possible solutions to waste management problems. Different solutions will be appropriate for different situations.</p>

10. Written Submissions

Name	Summary of comments	Response
Melbourne Water	<ul style="list-style-type: none"> - Melbourne Water also has a zero net greenhouse gas emissions by 2018 target. It may be worth CoM and MW working more closely on how best we can achieve greenhouse reductions for Melbourne. With similar goals and targets, it makes sense to talk through common issues and share information, ideas and solutions. - Strategy relates to 2014-2017? What happens in 2018? - What is the definition of carbon neutral? - Zero Net Emissions- Is this the same or different from "carbon neutral"? - <i>'Our six focus areas are council operations, commercial buildings, residential buildings, stationary energy supply, transport and resource waste'.</i> – what about working with industry, Melbourne Water, etc.? - Stationary energy supply target- Does this include electricity for commercial, industry and accommodation? - <i>'What if we didn't waste the 30% of energy?'</i>- large number - Explore further opportunities to reduce emissions through creating and strengthening effective partnerships. - Encourage progress to cleaner electricity production? such as working with industry, Melbourne Water, etc.? - for context, is it worth including an emissions profile for Victoria to illustrate what % of total emissions in Victoria CoM is responsible for? Is it worth listing where CoM ranks in total emissions compared to others, industry, etc.? - Diagram on page 6- this chart could also be presented as a Princeton Wedge diagram to improve readability and understanding. - Page 7- these are great achievements - are the greenhouse gas emission savings from these projects known? If so, it would be worth communicating these... - QVM solar array- Meaningless unit - should be kW or kWh/yr or similar - Page 8- GHG Inventory table- might be easier to read and interpret from a bar/column chart 	<p>Noted- City of Melbourne will work with Melbourne Water to explore opportunities for collaboration through the development of the Strategy Implementation Plan.</p> <p>Noted- Each revision of ZNE is for four years. The Strategy will be reviewed in 2018.</p> <p>Addressed- Carbon neutrality definition has been moved to earlier in the Strategy.</p> <p>Addressed- Reword to include industry</p> <p>Addressed- It includes all electricity and gas used for stationary purposes in the municipality. Wording revised to make clearer.</p> <p>Addressed- Reference included.</p> <p>Addressed- Enhanced industry section.</p> <p>Addressed- Included</p> <p>Noted- Comments considered in design process</p> <p>Addressed- Included where possible</p> <p>Addressed- changed to KW's not KWh</p> <p>Noted- Comments considered in design process</p> <p>Noted- It includes all electricity and gas used for non-residential stationary purposes in the</p>

Name	Summary of comments	Response
	<ul style="list-style-type: none"> - Non-residential energy usage figures- I assume this include emissions from industry, such as Melbourne Water? - Page 11- pie chart- QVM stands for? - Page 15- How? 'Over the next four years City of Melbourne will showcase the potential to create positive energy buildings.' This would seem to be a key issue. Below is intent, not methodology - Commercial building section- predominantly about commercial buildings, not much discussion on opportunities in industry - Waste- Melbourne Water also produces wastes as part of its operations. We should be working together to identify issues and potential waste to energy solutions - <i>'Work with the Metropolitan Waste Management Group, councils, developers and building owners to develop alternatives to landfill disposal.'</i>- and industry 	<p>municipality.</p> <p>Addressed- Queen Victoria Market</p> <p>Addressed- The implementation plan will include methodology. Strategy to reference the role of the implementation plan more effectively.</p> <p>Addressed- Enhanced industry section.</p> <p>Addressed- Included in energy section.</p> <p>Addressed- Enhanced industry section.</p>
ClimateWorks	<p>Capturing the opportunity in Melbourne As the draft strategy recognises, the City of Melbourne has an important role to play in working with businesses, residents and other levels of government to address barriers to the implementation of these opportunities. The draft strategy identifies a range of actions that will be taken to address these barriers – further consideration should be given to prioritising these actions in order to target:</p> <ol style="list-style-type: none"> 1. The areas where the greatest uncaptured abatement potential lies 2. Areas that present the greatest potential for 'lock in' if opportunities are not captured in the short-term 3. Overcoming the barriers identified as most significant through ClimateWorks' research and through the City of Melbourne's stakeholder engagement processes. A number of these key barriers are identified below. <p>High transaction costs: Many energy efficiency opportunities, which could deliver significant financial benefits, are spread across multiple sites (mostly commercial buildings but also homes and industrial sites), with multiple decision makers, resulting in high transaction costs. Overcoming this barrier is best achieved through a combination of improved standards for new developments and measures designed to encourage aggregation of opportunities in existing buildings, such as through third party service providers. Enabling low cost measures such as lighting to be bundled with higher cost measures such as improvements to heating, ventilation and air-conditioning (HVAC), thermal insulation and the installation of distributed energy is important to ensure that the full emissions reduction potential available across the city is realised, while also delivering financial savings to businesses and</p>	<p>Addressed- Barriers included in prioritisation approach outlined in the strategy. Details comments to be addressed in the development of the implementation plan</p>

Name	Summary of comments	Response
	<p>households.</p> <p>Capital constraints: Capital constraints was a key barrier mentioned by stakeholders in the consultation process that ClimateWorks undertook for this research. This can include limited access to suitable finance, and poor or deferred financial returns that can make investment in emissions reduction activities less attractive compared to other potential investments, such as business growth.</p> <p>Environmental Upgrade Agreements, offered through the City of Melbourne's Sustainable Melbourne Fund, provide a financial mechanism that addresses both the access to capital issue as well as another key barrier to energy efficiency in commercial and industrial buildings - the split incentive, which sees a disconnect between the investment required to capture energy efficiency (made by the building owner) and the financial benefit derived from that investment (which accrues to the tenant, through reduced energy bills). ClimateWorks research suggests that Environmental Upgrade Agreements are a key tool for unlocking the substantial emissions reduction potential locked up in commercial buildings, but further effort is needed to build broad market acceptance of this financing mechanism. To this end, ClimateWorks, in partnership with the Sustainable Melbourne Fund, have secured funding through the Australian Government's Energy Efficiency Information Grants program to demonstrate the business case for using an Environmental Upgrade Agreement to capture available energy savings, and we look forward to working with the City of Melbourne to communicate the benefits to its commercial residents.</p> <p>Split incentives: Environmental Upgrade Agreements can also help to overcome the 'split incentive', which was mentioned as a strong barrier for B, C and D grade tenanted commercial buildings, by providing a mechanism for sharing the costs and benefits of energy efficiency improvements between owners and tenants. That said, our research shows that around half of the total opportunity in commercial buildings is controlled by tenants, and generally does not require landlord approval or involvement. The City of Melbourne can raise awareness and help facilitate the capture of these opportunities amongst tenants, including through programs such as CitySwitch.</p> <p>Limited understanding of energy efficiency options and benefits: Another key barrier identified in our research is the limited understanding of energy efficiency options and benefits across Melbourne's businesses and households, and there is a key role for the City of Melbourne to play in addressing this information gap, by developing information about these options and benefits that is tailored for different types of businesses and households, and working with trusted intermediaries and suppliers to socialise this information. The City of Melbourne can also lead through its own operations and by promoting the benefits achieved by building owners and tenants who have implemented opportunities.</p>	
Green	The GBCA supports, in principle, the draft strategy's six	

Name	Summary of comments	Response
<p>Building Council of Australia</p>	<p>focus areas of council operations, commercial buildings, residential buildings, stationary energy supply, transport and resource waste. The GBCA's comments on the strategy targets and approaches are outlined below:</p> <p>Council operations</p> <ul style="list-style-type: none"> - We strongly support the City of Melbourne's approach to lead by example to reduce emissions. In particular we commend the City on its commitment to develop minimum environmental design standards for new council buildings, to enhance staff sustainable building knowledge, and to ensure all council building projects achieve 'a rating of at least 5 Star Green Star (or equivalent) rating where 50 per cent or more of the building is being renovated'. The GBCA believes it is important that local governments across Australia achieve Green Star certification for iconic council developments. Achieving certification clearly communicates the expectations council has for private sector development in the area, and it also builds industry's capacity to deliver best practice buildings. <p>Commercial buildings and industry</p> <ul style="list-style-type: none"> - The GBCA supports the statement that the commercial building sector offers the largest potential to reduce greenhouse gas emissions in Melbourne. However, we recommend this target be linked to Green Star – Performance ratings rather than, or in addition to, NABERS ratings. In contrast to NABERS, the Green Star – Performance rating tool is applicable to all commercial building types and it assesses building performance in management, indoor environment quality, energy, transport, water, materials, land use and ecology and emissions. The Green Star – Performance tool provides four compliance pathways by which greenhouse gas emissions metrics can be used. Given the rating tool's wider scope, a target for commercial buildings and industry that is tied to Green Star – Performance ratings will assist the City to achieve targets set for transport and waste management. It will also enable the City to gain operational benchmark data for more building types and across more areas such as indoor air quality and waste management. Where existing buildings already have a NABERS Energy or NABERS Water certificate, these can be submitted as a way of demonstrating performance within these areas. <p>The GBCA would recommend the commercial buildings target in the Zero Net strategy be changed to: Average 4 Star Green Star - Performance rating for commercial buildings by 2018.</p> <p>Residential buildings</p> <ul style="list-style-type: none"> - The GBCA believes councils have a large role to play in encouraging sustainable home design and operation, and in communicating the benefits of 	<p>Noted- Endorsement</p> <p>Noted- The City of Melbourne will work to advocate for a sustainable approach to buildings through our programs and operational performance. For this reason we are trialling Green Star Performance within our own buildings.</p> <p>In regards to our emissions reduction strategy we have determined that NABERS most appropriate target for measurement as it is focused on emissions as an industry standard – building owners more likely to undertake NABERS ratings based on mandatory disclosure, subsidies.</p> <p>Noted- To be incorporated into CoM programs web content.</p>

Name	Summary of comments	Response
	<p>these to the wider community. As such, the GBCA supports, in principle, the City's residential buildings target and the proposed approaches.</p> <p>Transport and waste management</p> <ul style="list-style-type: none"> - The GBCA generally supports the transport and waste management targets. However we encourage the City of Melbourne to consider how the Green Star – Performance rating tool can further encourage those in the commercial sector to reduce transport and commercial waste emissions. Examples of Green Star – Performance rating tool 'credits' that reward reduced transport and waste emissions from existing buildings are: <ul style="list-style-type: none"> - 'Alternative Transport Program' credit encourages existing building owners and/or operators to offer alternative forms of transport to building users - 'Transport Modes Survey' credit rewards buildings that measure building occupant use of alternative transportation modes - 'Procurement and Purchasing' credit rewards buildings that have a sustainable procurement policy in place and those that buy materials in accordance with their policy - 'Waste from Operations' credit rewards existing buildings with an Operational Waste Management Plan in place and further rewards are given based on the amount of operational waste diverted from landfill by weight - 'Waste from Refurbishments' credit rewards existing buildings that have a Waste Management Program in place that specifically addresses refurbishment, construction and demolition waste. The credit offers further rewards based on the amount of refurbishment material diverted from landfill. <p>Over time the performance data gained through the Green Star – Performance rating tool will enable the GBCA and councils such as the City of Melbourne to benchmark existing buildings across a range of areas. Given this, we encourage the City of Melbourne to include this important rating tool in the Zero Net strategy as part of a target or in future approaches. The GBCA commends the City of Melbourne on the work and consultation undertaken to date.</p>	

11. Key Stakeholder Workshop

a. Outcomes

Theme	Question	Comments	Response
Commercial Buildings	Targets	<ul style="list-style-type: none"> - Why 4 star? Ok for 2018 but need to go beyond - Why NABERS energy target or equivalent? What are the other options? - Consider other targets or units? 	<p>Noted- Given the current level, 4 stars is a challenging but achievable target for the city.</p> <p>Noted- We have determined that NABERS most appropriate target for measurement as it is focused on emissions as an industry standard – building owners more likely to undertake NABERS ratings based on mandatory disclosure, subsidies.</p>
	What's Missing?	<ul style="list-style-type: none"> - Projected impact of CBD (NABERS) - How do we address laggards – vol action won't get there – state and federal Government focus on compliance - Link to health and wellbeing - Industrial buildings (industry emissions) not addressed - Construction and embodied energy not considered – supply chain - Leadership role of councils – new section 	<p>Noted- Initiatives such as the expansion of CBD will encourage laggards to act.</p> <p>Addressed- Included in research section.</p> <p>Addressed- Industrial section enhanced</p> <p>Addressed- Research and potential future inclusion in programs included</p> <p>Addressed- include new section</p>
	CoM role	<ul style="list-style-type: none"> - Industry – influence and advocate – connect to B+1 work - Convene SM no. leaders to drive step change in energy supply – those that don't work together - Set innovation challenges to community – biggest problem we have – solve it - Disclosure of challenges – enable others to solve problems 	<p>Noted- Through the Strategy CoM is committed to bringing together stakeholders to address challenges and develop solutions.</p>

Residential	Targets	<ul style="list-style-type: none"> - Regional collaboration - Multi residential tool to assist in target 	<p>Noted- Collaboration and information sharing through implementation is key to this Strategy.</p> <p>Noted- The residential Green Star tool is still being tested. It will be considered as the residential target is being established in the first year of the strategy.</p>
	What's Missing?	<ul style="list-style-type: none"> - What do we want people to know and do (action based) - Value of sustainable apartments needs to increase - Lifestyle emissions and consumption of goods should be addressed 	<p>Noted- CoM's tools and programs are designed to achieve this outcome. The Strategy aims to set the direction.</p> <p>Noted- CoM will work with the property industry to drive this. Research is currently being undertaken.</p> <p>Noted- CoM has undertaken an ecological footprint analysis to understand these impacts. This will be used to help identify future programs and opportunities; however these emissions are not currently included in the municipal GHG inventory.</p>
	CoM role	<ul style="list-style-type: none"> - Advocate for residential target for metro region - IMAP - Advocate to state government for planning policy - Communication and advocacy to developers and people buying apartments 	<p>Noted- Collaboration and information sharing through implementation is key to this Strategy.</p> <p>Noted- Through ASBEC CoM will work with leaders in this space.</p>
	Partnership Opportunities	<ul style="list-style-type: none"> - Improving building codes given compliance focus of government - IMAP and MPA (planning and building issues) plus NCC (National Construction Codes) - World Green Building Council (sustainable low cost homes) 	<p>Noted- Through ASBEC CoM will work with leaders in this space.</p> <p>Noted- To be considered through the housing strategy process</p>
Energy Systems	Targets	<ul style="list-style-type: none"> - SMART Grids. - Urban solar atlas. Work with other stakeholders - Partnering with campuses or hospitals as a single business. - Developing/Driving a market for new generation capacity. CoM to work with prospective customers. - BZE research. 	<p>Noted- Page 20- smart grids are referenced, but CoM does not have the ability to implement</p> <p>Noted- Will be explored as part of the renewable energy initiative.</p> <p>Addressed- working with large property owners</p> <p>Addressed- explore initiatives to increase the demand for the development of large scale renewable facilities.</p> <p>Addressed- Include a position</p>

			of moving towards 100% renewable energy by 2030.
	What's Missing?	<ul style="list-style-type: none"> - Extend legislation to enable EUAs to extend to renewable energy (including upstream?) - Apply EUAs to the things people want to buy – (ie. Solar, but maybe others). - Waste to Energy 	<p>Noted- EUA's already cover renewable energy installation on commercial roofs.</p> <p>Addressed- Included in waste section</p>
	CoM role	<ul style="list-style-type: none"> - Partnership opportunities, CoM and others to drive demand for new renewable generation. 	<p>Noted- CoM's renewable energy program</p>
Transport	Targets	<ul style="list-style-type: none"> - Clarify 'what is low emission?' - Clarify where the 51% low emission transport comes from - Provide specific target for 'CoM will do', for example, %increase in bike lanes - Include realistic targets + stretch target = Gap to Zero 	<p>Addressed- Change to sustainable transport</p> <p>Addressed- From the Transport Strategy. Reference inserted.</p> <p>Noted- More detailed targets and information on CoM's activities regarding cycling infrastructure are covered in CoM's Transport Strategy and Bike Plan.</p>
	What's Missing?	<ul style="list-style-type: none"> - Provide more implementation targets/objectives under approach (as below) - Governance and leadership in transport from CoM 	<p>Addressed- The implementation plan will include more detail. Strategy to reference the role of the implementation plan more effectively.</p> <p>Noted- City of Melbourne's Transport strategy provides more information regarding Melbourne's leadership</p>
	CoM role	<ul style="list-style-type: none"> - (Upgrade) cycling networks needs more clarification – is it extend networks? - Focus on interconnectivity targets/objectives – between bike routes, bike and train links (through advocacy), train/walk and others - How can CoM promote facilities to increase cycling into city (for work) – bike parking spaces, showers - Centralised bike parking and facilities - More focus on pedestrian friendly design - Require these in all new buildings (both residential and commercial) - Develop an approach for existing buildings 	<p>Addressed- More detailed information on CoM's activities regarding cycling infrastructure are covered in the Bike Plan. Changed to reference the Bike plan within the action.</p> <p>Noted- More detailed information on CoM's activities regarding cycling and walking infrastructure is covered in CoM's Walking and Bike Plans.</p> <p>Noted- Cycling facilities requirements exist in the planning scheme.</p> <p>Noted- To be considered through the implementation plan.</p>

		<ul style="list-style-type: none"> - Rates discount for owners with the above facilities 	
	Partnership Opportunities	<ul style="list-style-type: none"> - Universities – for research into technology (electric bikes with solar/storage, charging points) - Engage with logistic companies/freight to collect data on freight use and reduce their energy use - Transport associations – Joint advocacy - State Government – facilitate and engage - VicRoads - Yarra Trams - Partnerships with inner municipalities – increase IMAP partnership 	<p>Noted- To be considered through the implementation plan. The City of Melbourne works with a wide variety of stakeholders in transport planning including VicRoads, Yarra Trams, PTV, Metro Trains, transport associations such as the Metropolitan Transport Forum and others.</p> <p>Noted- Through Plan Melbourne central Melbourne transport planning will be done in consultation with other neighbouring local councils. CoM will continue to actively contribute to and help drive IMAP projects.</p>
Waste	Targets	<ul style="list-style-type: none"> - Cost / funding included within targets - someone has to pay? - Can we enhance data collection through partnerships? (Audits / composition - building this into contracts) 	<p>Noted- To be outlined in the implementation plan.</p> <p>Noted- To be considered through the implementation plan.</p>
	What's Missing?	<ul style="list-style-type: none"> - Waste minimization? - Design planning / policy - Waste management the planning and policy project stage. - Waste transformation - turning waste from a negative into a positive. - Map waste eco-system - how does our waste system work / who's involved? (research opportunity). Review / map with key stakeholders. 	<p>Addressed- Incorporated in the 'what more needs to happen' section.</p> <p>Noted- This will be covered within the action: "Collaborate with government and business to encourage the establishment of more efficient waste collection systems for existing, new and redevelopment areas."</p> <p>Noted- City of Melbourne will contribute to the implementation of the Victorian Government's Getting Full Value policy which takes this approach by focusing on market development.</p> <p>Noted- To be considered in implementation plan and the review and update of the Integrated Waste Management Program</p>
	CoM role	<ul style="list-style-type: none"> - Link to food policy - local food / urban agriculture - Incentive scheme for residents 	<p>Noted- Included in transport section.</p> <p>Noted- CoM is trialling the 'Green Money' incentive scheme in Southbank and Docklands (launched November 2013).</p>

		<ul style="list-style-type: none"> - Queen Vic Market waste management - Advocacy role / information. Eg. E-waste education, change in ownership concept, - Online Education, facts and tips. Eg. Nappies 30% of waste landfill in the US, and take 500 years to break down. 	<p>Addressed- City of Melbourne is working with the Queen Victoria Market on an on-going basis to improve environmental management. Included in Council Operations section.</p> <p>Noted- To be considered through the implementation plan.</p> <p>Noted- We would welcome suggestions for improving the education material available on our webpage, www.melbourne.vic.gov.au/waste</p>
	Partnership Opportunities	<ul style="list-style-type: none"> - Precinct waste management solutions eg. RMIT / Melb Uni / QVM - Compost speed dating (bring different compost types together to make a useable product) - facilitated by council - Small business forums 	<p>Noted- One of the targets of the document is to develop precinct waste management solutions.</p> <p>Noted- To be considered in implementation plan</p> <p>Noted- City of Melbourne is a member of the Waste Wise Business Network and participates in their events and forums.</p>
Council Operations	Targets	<ul style="list-style-type: none"> - Should match with current research – IPCC - What about everyone else - MAV. Governance and link to other council. 	<p>Noted- CoM operations are already carbon neutral</p> <p>Noted- Collaboration and information sharing through implementation is key to this Strategy.</p>
	What's Missing?	<ul style="list-style-type: none"> - Council can assist tailoring new solutions (City Lab) - Empowering staff - Opportunity future IMAP projects - Social return on investment / holistic benefits / health and wellbeing / productivity 	<p>Noted- existing internal programs have linkages with various external programs</p> <p>Noted- already underway through CoM green staff engagements program</p> <p>Noted- CoM is an active member of IMAP. IMAP project opportunities will be consider in the development of the implementation plan</p> <p>Noted- Social return on investment was one of the main drivers for the sustainability initiatives in CoM's Council House 2 (CH2) with positive outcomes. See: http://www.melbourne.vic.gov.au/Sustainability/CH2/Evaluation/Pages/Evaluation.aspx</p> <p>Noted –included</p>

		- Link to lighting strategy	
	COM role	- Advocacy - lead by example	Noted- CoM will share learning's and partner with key stakeholders where possible
	Partnership Opportunities	<ul style="list-style-type: none"> - Beyond Zero Emissions - Advocacy / Research and Education - Energy Management System - Data: Open and transparent. Eg. Green buildings alive. - Data owners - Relationships and commitment from property owners - Education for property owners (practical examples / showcase good user stories) - Connect innovators with what they need. Ed. Data / Permits / Contracts. 	Noted- To be considered in the development of the implementation plan

Zero Net Emissions by 2020 – Strategy Development

Summary of stakeholder engagement that has occurred

The Zero Net Emissions Strategy has been developed with extensive stakeholder engagement including three stakeholder workshops, an external reference group and individual meetings with key government and commercial decision makers and non-government organisations.

Stage one: September 2012 - December 2012

Purpose: To define the desired outcome and objectives for the review of the strategy

Actions:

- One external reference group meeting
- Four international city conversations
- One key stakeholder workshop
- 25 one-on-one key stakeholder meetings

Stage two: January 2013 - July 2013

Purpose: To define the content and objectives to be included in the strategy

Actions:

- Extensive economic modelling of emissions reduction opportunities within the municipality
- Two external reference group meetings
- One key stakeholder workshop with 20+ attendees
- 10 one-on-one key stakeholder meetings

Stage three: August 2013 – December 2013

Purpose: To obtain feedback on the draft strategy

Actions:

- One external reference group meetings
- One key stakeholder workshop with 20+ attendees
- Three one-on-one key stakeholder meetings
- Two leadership roundtables
- Community engagement (refer Attachment 3 for outcomes)

External Reference Group Members
Tony Wood- Clinton Climate Initiative
Claire Blewitt – C40 Melbourne City Director
Kate Auty – Commissioner for Environmental Sustainability
Property Council of Australia
Grocon
RMIT
Energy Efficiency Council

Key Stakeholders	
CitiPower & Powercore	Department of Environment and Primary Industries
Department of Primary Industries	RMIT
Public Transport Victoria	Melbourne Water
Department of Transport	IMAP Councils
Origin Energy	Clean Energy Council
Department of Climate Change and Energy Efficiency (DCCEE)	Metro Trains
Low Carbon Australia (LCA)	University of Melbourne
Places Victoria	CRC (Low Carbon Living)
Department of Planning and Community Development (DPCD)	C40
Sustainability Victoria	Clinton Climate Initiative
NAB	CSIRO
ANZ	Commissioner for Environmental Sustainability
Grocon	Beyond Zero Emissions
Lendlease	Environment Victoria
VECCI	Village Well
Property Council of Australia	Energy Efficiency Council
Green Building Council of Australia	Melbourne Energy Institute