

Briefing Paper 5

Cities and climate action after Paris: key opportunities and priorities

May 2016

Executive Summary

The 2015 Paris Climate Summit provided a powerful demonstration of the leadership role which cities and regions are playing in closing the gap between national emission reduction commitments and the actions required to keep global warming below 1.5 degrees.

A rapidly expanding array of sub-national climate action networks and alliances is further strengthening the capacity of cities and regions to accelerate emissions reductions and maximise the economic and employment opportunities arising from the global transition to a zero carbon economy.

Many Australian cities and regions are demonstrating strong leadership in designing and implementing ambitious emission reduction strategies. Maximising the full potential of Australian city level climate action will however require far stronger climate policy leadership by Commonwealth and State governments.

Key climate change policy challenges facing cities include strengthening the governance, financing and implementation capabilities required to drive emissions reductions at the necessary speed and scale. Continuing improvements in co-operation and communication between individual cities and between national and international networks will also be crucial.

Cities leading on climate action

Our struggle for global sustainability will be won or lost in cities. Joan Clos, Executive Director, UN Habitat, 2014

The 2015 Paris Climate Agreement includes two crucial and ambitious goals:

- i) to limit the increase in average global temperature to 'well below 2°C above pre-industrial levels' and to 'pursue efforts to stay within 1.5°C.'
- ii) to achieve 'net zero emissions' by the second half of the 21st century (a balance between anthropogenic emissions by sources and removals by sinks).^{1,2}

The abiding problem, as the world's leading climate scientists continue to remind us, is that there is still a significant gap between national greenhouse gas (GHG) emission reduction commitments and the actions required to actually achieve these goals. Indeed full implementation of current national emission reduction commitments would still leave the world on track for global warming of between 2.7°C and 3.5°C.³

The key challenge now is to rapidly accelerate the implementation and ramp up the ambition of the Paris emissions reduction commitments. The Paris Climate Summit provided a powerful demonstration of the leadership role which cities and regions can play in meeting this challenge.

For the first time it is the world's cities that are making the running at the UN Climate Summit. We have set a clear expectation, making a very public, high-profile promise to go over and above any targets implemented as a result of any international agreement at COP21.

George Ferguson, Mayor of Bristol and spokesperson for EURO CITIES, Paris, December 2015.

The significance and necessity of urban climate action is further reinforced by the UN's Sustainable Development Goals, notably Goal 11 'Sustainable Cities and Communities' which includes the following target:

*By 2020, substantially increase the number of cities and human settlements adopting and implementing integrated policies and plans towards inclusion, resource efficiency, mitigation and adaptation to climate change and resilience to disasters.*⁴

This briefing paper provides an overview of the crucial role which cities will play in driving and accelerating emissions reductions with a particular focus on priorities, opportunities and challenges for Australian cities. The paper includes a range of links to key international city and regional climate change initiatives, networks and alliances.

The crucial role of cities

Cities are the laboratories that can inform and inspire a better future. Gregor Robertson, Mayor of Vancouver, December 2015

Cities are playing a crucial role in driving action to address climate change risks and challenges for six key reasons:

- i) More than half the world's population already lives in cities. By 2020 the proportion of people living in cities is expected to rise to 66% with most of the increase concentrated in Africa and Asia.⁵
- ii) Cities are on the front line of climate risk. The concentration of people and infrastructure in cities increases the potential impacts of many of the key consequences of climate change including storms and floods, sea level rise, heat waves, droughts and fires, and water and food shortages. Urban areas with poor quality infrastructure and weak governance systems are particularly vulnerable.⁶
- iii) Cities are a major source of greenhouse gas emissions. Cities account for over two thirds of global energy consumption and more than 70% of energy related CO₂ emissions. Urban design and infrastructure investment choices will play a key role in locking in—or avoiding—high carbon pathways.⁷
- iv) Cities are key sites for achieving rapid emission reductions including through an accelerated shift from fossil fuels to renewables. The potential emissions reduction impact of decisive city level action in three sectors alone—buildings, transportation and waste—would have an impact greater than the total emissions of the United States and the European Union. While all cities will play important roles in the transition to a zero carbon economy, some of the fastest progress will be made by assisting cities in developing economies to leapfrog

emissions-intensive infrastructure.⁸

v) Cities are key sites for testing and demonstrating innovative strategies and technologies. The significance of city-level climate leadership has been heightened by the limited success which national governments and international governance regimes have had in driving a co-ordinated global climate change response. City and regional level decision-makers and alliances are filling this gap by driving and demonstrating innovative

and transformational emission reduction and resilience strategies.^{9,10}

vi) City level climate action can have multiple social and economic co-benefits including improved air quality and public health, increased energy security, reduced traffic congestion and new employment opportunities.¹¹

5 reasons why cities hold the key to success in achieving the Paris Climate Agreement goals

Mark Watts, Executive Director C40¹²

'The good news is that already in C40 we can see that the mayors of the great world metropolises are fully bought into the concept that the most successful cities of the future will be those that transition first to low carbon development. C40 mayors are driving towards compact, dense cities, with high mobility based on mass transit, cycling and walking, running on data and learning from each other. COP21 in Paris has created the momentum necessary to make it realistic that runaway climate change can be prevented. But the Agreement itself is not enough. There remains both a leadership and an action gap which C40 cities can fill – here's five ways how cities are leading:

1. Lead from the front: C40's research indicates that one third of the global safe carbon budget—the total amount of greenhouse gas emissions we can risk putting into the atmosphere—will be determined by urban policy decisions made between now and 2020. From Rio to Paris, to Los Angeles and Shenzhen, today's leading cities are setting the bar for other cities and countries.

2. Tap full potential of direct mayoral powers: C40 has identified 2,300 high-impact, readily deliverable actions that could save 450MtCO₂ by 2020, equivalent to the annual emissions of the United Kingdom—the world's fifth biggest economy. Together with what has already been achieved, this would mean C40 cities delivering over 1Gt of GHG reductions by 2020.

3. Focus on key countries and sectors: More than two-thirds of global energy supply is consumed in cities, primarily by the buildings, transport, and industrial sectors. We must support low carbon development of these sectors in the rapidly urbanizing countries of China, India and Brazil. Decisions about urban infrastructure, systems and land use planning by these countries during the next one to five years will have an enormous impact on whether we "lock in" or avoid significant carbon emissions.

4. Unlock the funding to make low carbon development a reality: The lack of access to finance is one of the biggest barriers to cities delivering climate action. Engaging private finance to mobilize climate action in cities—including improving mass transit systems and promoting renewable energy—is one of the most effective ways to foster economic growth. Low carbon urban actions available today could generate a stream of savings in the period to 2050 with a current value of US\$16.6 trillion, and could reduce annual GHG emissions by 3.7Gt CO₂.

5. Win the argument for climate action: Delivering on the Paris Agreement objectives requires fundamental and systemic changes, which won't come about—and certainly not swiftly enough—unless there is a groundswell of political support demanding action.'

The role of cities in accelerating the Paris Agreement

The final text of the Paris Climate Agreement points to the key role of ‘civil society, the private sector, financial institutions, cities and other subnational authorities, local communities and indigenous peoples’ in mobilizing ‘stronger and more ambitious climate action by all Parties’.¹³ The Agreement places strong emphasis on the contribution which city level action and city alliances can make in trialling emissions reduction initiatives and in demonstrating opportunities to further ramp up the ambition of national commitments.

The Paris City Hall Declaration, signed by over 1000 mayors and governors from 150 countries, highlights the game changing potential of cities and regions in accelerating the transition to a just and resilient zero carbon economy.

Key declaration commitments include:

- an 80% reduction in greenhouse gases by 2050;
- rapid progress to 100% renewable energy; and
- the delivery of 3.7Gt of urban greenhouse gas emissions reductions annually by 2030.¹⁴

This is the equivalent of up to 30% of the difference between current national commitments and a 2°C emissions reduction pathway. Paris Mayor Anne Hidalgo provided an even more upbeat assessment in launching the Paris Declaration. ‘This is a historic initiative,’ she said. ‘It can resolve half of the global climate equation.’

The Paris Declaration also highlights the rapidly growing importance of city and regional partnerships and alliances in accelerating and scaling-up climate change solutions. Key commitments from sub-national climate alliances announced in Paris included the following:

- The Compact of Mayors representing 428 cities and over 376 million people committed to 25Gt of GHG reductions by 2050.
- The Covenant of Mayors representing 6,600 municipalities and more than 211 million people committed to 20% reductions in GHG emissions by 2020.
- The Compact of States and Regions representing 44

state and regional governments committed to 12.4Gt of GHG reductions by 2030.

- The Climate Group and CDP currently representing 200 major companies, states and cities committed to securing 80-100% of their energy from renewable sources.
- The Carbonn Climate Registry covering 608 local and regional governments and over 500 million people reporting commitments to reduce 1Gt of GHG by 2020.
- The Under 2 MOU covering 65 states, regions and cities, representing more than \$17.5 trillion in GDP and 572 million people, committed to reducing emissions 80-95% below 1990 levels by 2050.
- The ICLEI (Local Governments For Sustainability) declaration advocating increased support for local and national governments to rapidly phase out fossil fuels and accelerate the switch to 100% renewable energy.¹⁵

The Paris Climate summit showcased hundreds of inspiring examples of transformational climate and energy actions by individual cities and regions—see for example the C40 climate action leadership awards, the Transformative Actions Project and the thousands of links on the NAZCA Lima-Paris Action Agenda climate cities platform.

Table 1 (page 8) provides an overview of actions being taken by a selection of cities with commitments to reduce their emissions by between 80-100%.

Climate leadership by Australian cities and regions

We’re building this transition from the ground up, showing negotiators here in Paris that they can and must commit to 100% clean energy and an end to fossil fuels as soon as possible. Clover Moore, Lord Mayor of Sydney, December 2015

Many Australian cities and regions are demonstrating strong leadership in designing and implementing innovative climate strategies.

At the State level the Government of South Australia

Opportunities for city level emissions reduction



Figure 1: Overview of key opportunities and priorities for city level emissions reductions.

has committed to the goals of 100% renewable energy and net zero emissions by 2050.¹⁷ The Australian Capital Territory is on track to reach its target of a 40% emission reduction target (below 1990 levels) by 2020 and is also on track to have 100% of electricity consumed in the ACT supplied by renewable energy by 2020.¹⁸ Addressing the energy efficiency challenge the ACT has also conducted Energy Efficiency Improvement Scheme actions in more than 60,000 homes.¹⁹

The City of Adelaide is aiming to be the world's first carbon neutral city.²⁰ The City of Sydney has made a commitment to achieve 100% renewable energy by 2030.²¹ Both the City of Melbourne and the City of Sydney are lead members of the C40 network.

The *Melbourne Renewable Energy Project*, an important part of the City of Melbourne's strategy for achieving net zero emissions by 2020, provides an excellent



MELBOURNE RENEWABLE ENERGY PROJECT

In an Australian first, some of Melbourne's most iconic businesses, universities, cultural institutions and Councils are banding together to drive investment in new renewable energy.

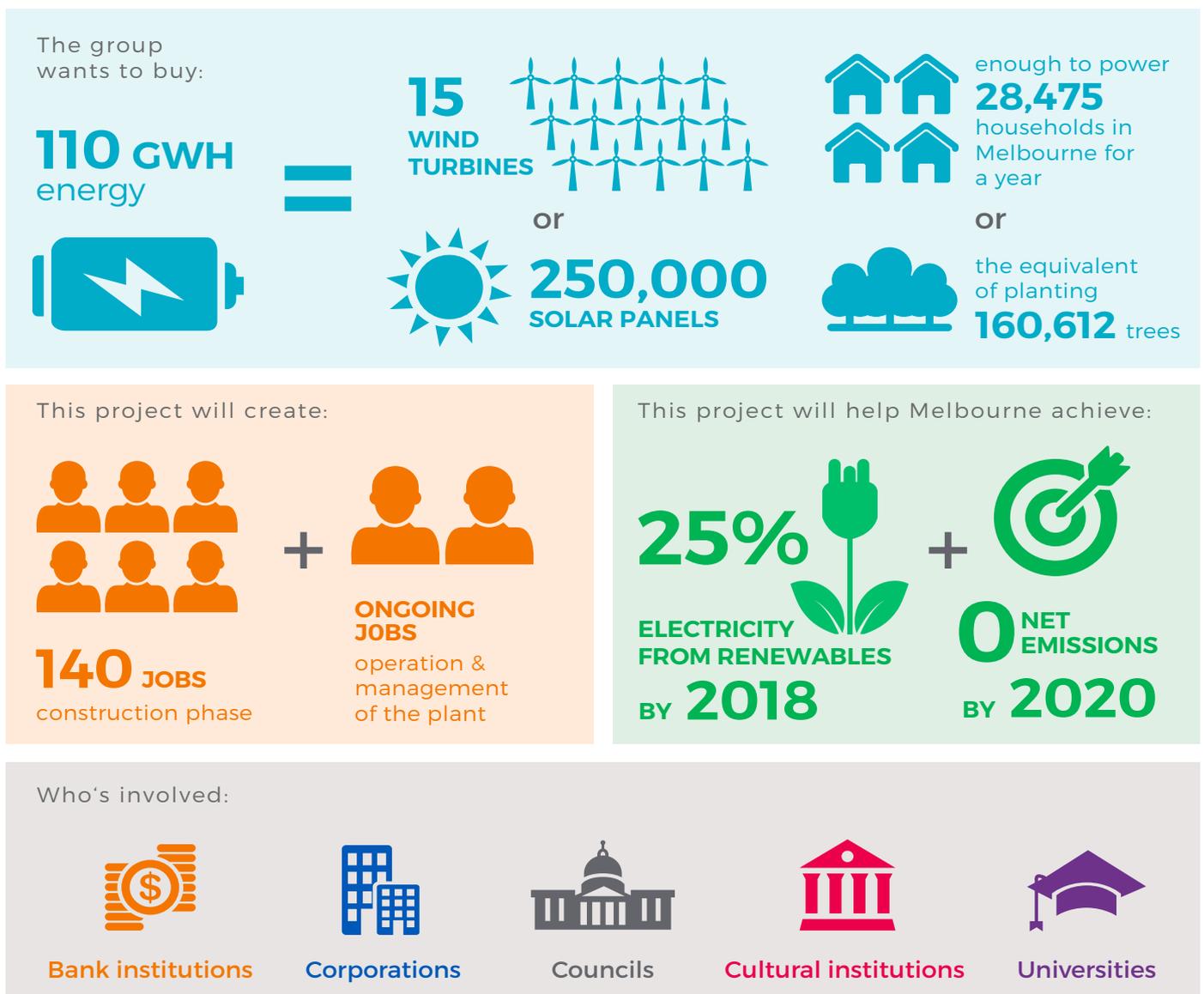


Figure 2: The Melbourne Renewable Energy Project. Source: Melbourne City Council.²²

example of the ways that cities can act as laboratories and exemplars by driving innovative emission reduction strategies. This project brings together the combined purchasing power of major Melbourne institutions to realise new renewable energy investments. Project partners include the University of Melbourne, RMIT, NAB, NEXTDC, the Cities of Moreland and Port Phillip, Federation Square, the Melbourne Convention Centre, Citywide and Bank Australia.

Many cities and towns in regional Australia are also exploring ways to distribute the environmental and social benefits of transforming their energy systems through renewable energy, decentralisation and community-ownership.

The Shire of Byron Bay is working with Beyond Zero Emissions to develop and implement a plan to transition the entire Shire to zero net emissions within 10 years, with a strong emphasis on community led initiatives.²³ Towns including Newstead in Victoria and Tyalgum in NSW are acting collectively towards their goal of 100 per cent renewable energy.^{24,25}

Hepburn Wind in central Victoria became Australia's first community-owned wind farm when it started generating in 2011.²⁶ And Australia's first community-owned energy retailer, Enova Energy is also set to start operations in northern NSW, with the aim of ensuring the whole community can benefit from, and participate in, the shift to renewables.²⁷

Maximising the full potential of Australian city level climate action will however require far stronger climate policy leadership by Commonwealth and State governments. Key national climate policy leadership priorities include a national emission reduction target of net zero emissions by 2050, a robust price on carbon, a rapid scale-up of renewable energy and co-ordinated retirement of fossil fuel assets, an undertaking to leave new fossil fuel deposits in the ground, and a comprehensive strategy to mobilise the public and private sector infrastructure investment required to drive a rapid shift to a decarbonised economy.

Policy challenges facing cities

Key climate change policy challenges facing cities include:

Governance challenges

Strengthening climate governance requires improved co-ordination and collaboration throughout the entire institutional landscape: between levels of government, across policy areas (e.g., transport, health and spatial planning), and between industry sectors. Strong metropolitan governance is a precondition for effective urban climate response and the distributed municipal governance of Australia's major cities makes integrated metropolitan action difficult to achieve.

In Australia's cities, legislative and regulatory authority for climate response is dispersed and weakly defined. State governments need to consider how metropolitan climate governance can be strengthened, perhaps by investing new powers and resources in existing bodies such as the Greater Sydney Commission, the Western Australian Planning Commission and the Melbourne Planning Authority.

Access to climate finance

Reflecting the 'governance deficit' outlined above, Australia's urban municipal governments lack resources (and the powers to raise them for direct climate action). Two immediate necessities arise: that of resource sharing across municipal metropolitan landscapes to allow action at appropriate impact scales and improved resourcing of urban climate frameworks by States and the Commonwealth.

Social equity

The burdens and benefits of climate action need to be equitably distributed. Managing the different exposure of urban communities to climate change must be a priority for policies that aim to improve safety and well-being in the face of climate change. These considerations are to the fore in Australia's cities, which have registered worsening socio-economic disparities in recent decades including growth in the numbers of 'absolutely poor' (notably homeless) people.²⁸ The absolutely poor are acutely exposed to the risks outlined above, especially the impacts of worsening

CITY	POPULATION (approx.)	ANNUAL EMISSIONS (approx.)	EMISSIONS TARGET	ACTIONS
Adelaide, Australia <i>Carbon Neutral Adelaide</i>	23,000 (Adelaide City Council area)	1 million tonnes	100% reduction by 2020	Supply 50% renewable energy by 2025, improve performance of built environment, transport and street lighting, increase uptake of local renewable energy, and encourage low-carbon commuting and consumer choices.
Copenhagen, Denmark <i>2025 Climate Plan</i>	580,000	1.7 million tonnes	100% reduction by 2025	Install 360mW of renewable energy by 2025, use 100 per cent biofuels in city co-generation by 2025, and use electric, hydrogen, biogas or bioethanol in 25% of all light vehicles by 2025.
Melbourne, Australia <i>Zero Emissions Strategy</i>	122,000 (Melbourne City Council area)	5.8 million tonnes	100% reduction by 2020	Supply 25% renewable energy by 2018, upgrade office building energy efficiency, increase urban forestry and food production, reduce waste, and reduce council emissions while maintaining carbon neutrality through offsets.
New York City, USA <i>#OneNYC</i>	8.4 million	51 million tonnes	80% reduction by 2050	Retrofit buildings for energy efficiency, install solar power on municipal buildings, plan low-carbon shift in transport modes, and send zero waste to landfill by 2030.
Portland, USA <i>Climate Action Plan</i>	609,000	7.7 million tonnes	80% reduction by 2050	Upgrade buildings and energy efficiency, link urban form and transport, reduce solid waste, support local food and agriculture, support urban forests and natural systems, and build community engagement, outreach and education.
Stockholm, Sweden <i>Stockholm Action Plan for Climate & Energy</i>	902,000	2.1 million tonnes	100% reduction and fossil-fuel free by 2040 (45% reduction by 2020)	100% reduction and fossil-fuel free by 2040 (45% reduction by 2020) Supply all city energy with renewables by 2040, and eliminate local government fossil fuel use by 2030 and community-wide fossil fuel use by 2040.
Toronto, Canada <i>Climate Change Action Plan</i>	3.2 million	19 million tonnes	80% reduction by 2050	Support community engagement, renew high-rise buildings to be more energy efficient, expand residential solar hot water, encourage local food production, plan for community energy, and shift to low-emissions taxis and limousines.
Växjö, Sweden <i>Energy Plan for the City of Växjö</i>	87,000	0.3 million tonnes	100% reduction and fossil fuel free by 2030 (65 per cent reduction by 2020).	Supply 100% renewable energy 2030, develop local biofuels and biogas for district heat and power, increase local food production, support active transport, and shift to ethanol and electric vehicles.

Table I: Cities committed to reducing CO₂ emissions by 80-100%.

*Source: Information compiled by the authors from the NAZCA Climate Action Platform, CDP, Carbon Climate Registry and local government web sites.¹⁶ See references for weblinks to city strategies.

climate extremes. In cities and regions particularly dependent on fossil fuel based energy and industries the principle of 'just transitions' must guide policies that aim to drive economic transformation in the quest for sustainability.

Improved and agreed methods for measuring, monitoring and reporting emissions reduction outcomes and impacts

In many world cities, monitoring resources are poorly developed and/or poorly integrated with policy interventions. Australia has historically enjoyed high quality and accessible urban data resources but these need to be extended and continuously improved to monitor new forms of social and environmental pressure in the face of climate change. Continued availability for public and civic use is also critical as commercialisation and fiscal cutbacks to public information systems undermines urban climate response. The [Australian Urban Research Infrastructure Network](#) is an important national urban information facility that could support climate response but will need further resourcing to do so.

Urban resilience has emerged internationally as a marker and frame of ambition for improving city security and well-being in the face of manifold threats. Both the City of Sydney and the City of Melbourne now host Rockefeller funded resilience programs that commit to metropolitan scale response.²⁹ The City of Melbourne and the University of Melbourne are appointing a new co-funded Chair in Resilient Cities to drive enhanced coordination of knowledge and policy effort.³⁰ Although focused on a plural range of urban threats, the resilience effort represents a growing stock of knowledge and institutional capacity that can be better harnessed to climate response to the advantage of both frameworks.

Conclusion

The Paris Climate Agreement clearly signals the end of the fossil fuel era and opens the door for the essential transition to a just and resilient zero-carbon global economy.

However, the speed of this transition must be rapidly increased if we are to bridge the large gap which still exists between national commitments and the actions required to keep global warming below 1.5 degrees. The key task now therefore is to dramatically increase ambition and accelerate the speed with which we decarbonize the global—and Australian—economies. The energy, creativity and determination of climate resilient communities, cities and regions can play a decisive role in achieving this goal.

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