SUB-NATIONAL CLIMATE POLICIES
How does the ACT compare?

PART 2 Data tables

ACT ClimateChangeCouncil CCC

Acknowledgments

The authors would like to thank the Environment and Planning Directorate, ACT Government and other Australian jurisdictions that replied to our request for information.

The tables below provide the compiled background data that was used for the analysis in Part I. The tables are split between Australian and non-Australian jurisdictions as well as between states and cities. The tables are arranged to cover a range of policy areas (parameters, emissions targets, renewable energy, energy efficiency, transport, waste) congruent to the framework presented in the report.

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Comparing Australia Cities: Key Parameters

City	Category	Population[1]
ACT Dominated by city of Canberra	Territory	394,675 (2015)
City of Adelaide Small central fraction of total urban population	Sub-urban area	22,690 (2011)
City of Brisbane Contains about ½ the urban population	Large sub-urban area	1,041,839 (2011)
City of Hobart Small central fraction of total urban population	Sub-urban area	47,700 (2006)
City of Melbourne Small central fraction of total urban population	Sub-urban area	100,611 (2011)
City of Sydney Small central fraction of total urban population	Sub-urban area	169,505 (2011)

1 Based on Australian Bureau of Statistics (ABS) 2014 data, unless stated otherwise.

Comparing Australian States and Territories: Key Parameters

State/Territory	Category	Population[2]	Annual Population Growth[3]	Annual Gross State Product (GSP) Per Capita[4]	Total Emissions in 2013 (Mt CO_2-e) (including LULUCF)[5]	Annual Emissions Per Capita (tonnes)	Emissions Intensity (CO_2e/ GSP, kilograms of GHG per dollar)
ACT	Territory	394,675	1.2%	92,140	3,934.1 (2014-2015, including Scope 2 emissions)	9.97	0.11
New South Wales	State	7,565,500	1.4%	64,858	141.8	18.7	0.28
Northern Territory	Territory	244,000	0.4%	86,516	13.8	56.5	0.65
Queensland	State	4,750,500	1.4%	62,498	159.2	33.5	0.53
South Australia	State	1,690,000	0.9%	56,474	27.4	16.2	0.28
Tasmania	State	514,800	0.3%	48,378	1.7	3.3	0.06
Victoria	State	5,840,000	1.9%	58,856	119.7	20.5	0.34
Western Australia	State	2,581,300	1.6%	99,552	83.6	32.4	0.32

2 Based on Australian Bureau of Statistics data (ABSa, ABSb 2014).
3 Ibid.
4 Ibid.
5 Based on National emissions inventory data.

Comparing Australian States and Territories: GHG Emissions Targets

City/Region/ Municipality	Short Term Target [6 7]	Long Term Target	Legal Form	Progress	International Cooperation	Use of Offsets?
ACT	40% below 1990 levels by 2020 (30th of June).	Net zero emissions by 2060 (30th of June). 80% below 1990 levels by 2050 (30th June).	**Legislated** under the *Climate Change and Greenhouse Gas Reduction Act 2010.*	The relevant greenhouse gas inventory has not been released yet and thus it is impossible to accurately track emissions against the established targets.[8] Updates are provided through implementation every three years with the next report due in 2017.	ICLEI member. Has signed the Compact of States and Regions and Compact of Mayors.	**Yes**, however these are used as a last resort under the *ACT Carbon Offsets Policy.*
New South Wales	N/A	N/A	N/A	N/A	N/A	N/A
Northern Territory	N/A	60% below 2007 levels by 2050.	**Not legislated**. Aspirational goal.	N/A	There is no NT government initiated or managed program for carbon offsetting. There is a number of land-manager projects generating carbon credits through the savannah burning methodology, either for sale on the international market or via the Emissions Reduction Fund. The largest of these is the WALFA project in western Arnhem Land. The Voluntary Offset Agreement for the INPEX Ichthys Project includes a large greenhouse gas offset program, but this is yet to be implemented.	**Yes**, there is an established carbon offsetting scheme, primarily for land rehabilitation and revegetation.
Queensland	N/A	N/A	N/A	Review conducted in 2008, but no clear reporting and updating timeline.	N/A.	Yes, including farm carbon management.

City/Region/ Municipality	Short Term Target [6] [7]	Long Term Target	Legal Form	Progress	International Cooperation	Use of Offsets?
South Australia	N/A	60% below 1990 levels by 2050.	**Legislated** under the *Climate Change and Greenhouse Gas Emissions Reductions Act*.	Emission have been reduced to 9% below 1990 levels. There is a mandate to regularly monitor and report on progress.	Has signed the Compact of States and Regions and Compact of Mayors.	**Yes**, use of carbon offsets and GreenPower. Wants to establish a national offsets registry.
Tasmania	Aspirational interim goal of 35% below 1990 levels by 2020.	At least 60% below 1990 levels by 2050. This has already been met.	**Legislated** under the *Climate Action Bill 2008* (for the 2050 goal).	Has already been exceeded as emissions are currently 90% below 1990 levels. This is primarily due to natural reforestation post-1990 and new accounting rules. Have released greenhouse gas inventories, but no clear timeline for evaluation and updates.	ICLEI member.	N/A
Victoria	Formerly 20% on 2000 levels by 2020. This target was abolished in 2012 but it now under review in 2015.	N/A	**Previously legislated** under the *2010 Climate Change Bill*.	N/A.	ICLEI member.	**Yes**, through the Victorian carbon exchange. However this is a state based scheme, not national or international. Target of purchasing 50% greenpower by 2050.
Western Australia	N/A	N/A	N/A	N/A	N/A	N/A

6 Emission targets are in GHG emissions unless stated otherwise.
7 All targets are based on data gathered from the Carbonn database, the UNFCCC's NAZCA databse and cross-referenced against existing official documentation (where available).
8 Office of the Commissioner for Sustainability and the Environment, 2014. "Implementation Status Report: A report on the implementation of AP2: a new climate change strategy and action plan for the Australian Capital Territory", (Canberra).

Comparing Australian Cities: GHG Emissions Targets

City/Region/ Municipality	Short Term Target [9] [10]	Long Term Target	Legal Form	Progress	International Cooperation	Use of Offsets?
ACT	40% below 1990 levels by 2020 (30th of June).	Net zero emissions by 2060 (30th of June). 80% below 1990 levels by 2050 (30th June).	**Legislated** under the *Climate Change and Greenhouse Gas Reduction Act 2010*.	The relevant greenhouse gas inventory has not been released yet and thus it is impossible to accurately track emissions against the established targets.[11] Updates are provided through implementation every three years with the next report due in 2017.	ICLEI member. Has signed the Compact of States and Regions and Compact of Mayors.	**Yes**, however these are used as a last resort under the ACT Carbon Offsets Policy.
Adelaide	Aspiration to be carbon neutral by 2020.	N/A	Council decision.	N/A	Has signed the Compact of States and Regions and Compact of Mayors.	**Yes**, use of accredited offsets and GreenPower purchases, but no greater than 35% of total electricity (for 2014).
Brisbane	Goal of becoming carbon neutral by 2031. Goal of reducing average household's carbon emissions from energy, waste and transport to six tonnes of C02e per year	N/A	Part of the Brisbane Vision 2031 document.	Mention of periodic tracking and review in climate action plan, but no clear timeline.	ICLEI member.	**Yes**, use of Greenhouse offset mechanism and GreenPower purchases.
Hobart	Hobart has agreed to reduce emissions by 30% on 2009 levels by 2020. Council has endorsed goal to be carbon neutral by 2020.	N/A	Council decision.	Has reduced emissions by 71% based on 1996 levels. Conducts regular inventories, but no clear timeline for review.	ICLEI member and part of the Cities for Climate Protection Program.	Yes, in compliance with the ICLEI 2009 offsets policy guide and will only use gold standard offsets. Further guidelines to be established.

City/Region/ Municipality	Short Term Target [9] [10]	Long Term Target	Legal Form	Progress	International Cooperation	Use of Offsets?
City of Melbourne	Municipal target of net zero emissions by 2020.	N/A	Council decision.	Council is a registered carbon neutral organisation as of 2012. Difficult to track progress against targets due to changes in measurement and accounting. Periodic updates have been provided in 2008 and 2014, however the timing of the next update is unclear.	Host city of the ICLEI oceania regional secretariat.	**Yes**, through the National Carbon Offset Standard (Carbon Neutral Standard).
City of Sydney	70% below 2006 levels by 2030.	N/A	Implemented through the *Sustainable Sydney 2030* report (2014).	City has remained carbon neutral through the use of offsets. Emissions have been steadily declining over the past decade. Biannual reviews of progress against sustainability targets are conducted.	ICLEI member.	**No**. The City of Sydney is already classified as carbon neutral through the National Carbon Offset Standard, however offsets do not apply to the 2030 target.

9 Emission targets are in GHG emissions unless stated otherwise.
10 All targets are based on data gathered from the Carbonn database, the UNFCCC's NAZCA databse and cross-referenced against existing official documentation (where available).
11 Office of the Commissioner for Sustainability and the Environment, 2014. "Implementation Status Report: A report on the implementation of AP2: a new climate change strategy and action plan for the Australian Capital Territory", (Canberra).

Comparing Australian States and Territories: Energy Targets and Measures

City/Region/ Municipality	Renewable Energy Targets	Renewable Energy Measures	Energy Efficiency Targets	Energy Efficiency Measures
ACT	90% of electricity supply to be renewable by 2020.	Large-scale feed-in tariff and reverse auction scheme. Large scale community solar and wind farms installations. Trial of advanced energy systems in collaboration with the ANU and Canberra Institute of technology. Has created the *ACT Smart Energy* advice system for businesses. Mapped heating and cooling loads across the ACT. Mapped electricity distribution and provided information on the capacity of substations and feeders to absorb renewable energy generation.	The ACT Energy Improvement Scheme has targets of achieving energy savings of 8.6% per year for Tier 1 (larger) electricity retailers. 20% energy savings per year during the period 2015-2020 for low-income 'priority households'.	*Energy Efficiency Improvement Scheme*: requires retailers to implement energy efficiency improvements into homes to reach the energy savings target *ACTSmart program* provides education, assessment and retrofits, including appliance replacement, for low income households. Minimum Energy Performance Standards (MEPS) for appliances and equipment. Energy efficiency provisions as established under the National Construction Code. Buildings standards linked to EE standards in the Building Code of Australia.
New South Wales	20% of energy production to be provided by renewable energy by 2020.	Climate Change Fund of 2007 (former). This has been discontinued. Created a Renewable Energy Advocate within NSW Trade and Investment. Created a benchmark price range for small scale solar generation.	Help business and households to achieve by 2020 annual energy savings of 16,000 GWh compared to 'business as usual' trends. Have half of NSW commercial floor space achieves 4-star NABERS energy and water rating by 2020. Aims to support 2021 goals including assisting households and businesses to achieve energy savings of 16,000 gigawatt hours by 2020.'	Power Savings Kit' used to reduce energy use in low income households through advice and behavioural change programs. Home Power Savings Program supported 220,000 low income households in order to collectively save $35 million through reduced energy usage. 500 hotels, office buildings and shopping centres which have NABERS energy and water efficiency ratings. Provide incentives through the Energy Savings Scheme to encourage greater energy efficiency actions by renovators, residents and tradespeople. Extend the scheme to appliance retailers. Create online platform to provide information for potential renewable energy investors.

City/Region/ Municipality	Renewable Energy Targets	Renewable Energy Measures	Energy Efficiency Targets	Energy Efficiency Measures
Northern Territory	N/A	Have established a timetable for the phase-out of diesel electricity generation in regional and remote communities to be replaced by renewable or low carbon alternatives. Use of rebates and grants e.g. 34.1 NTG Energy Smart Rebates (NRETAS), NTG Rainwater Tank Rebates (NRETAS), NTG Solar Hot Water System Retrofit Rebate (PWC). 'Smarter Business Solutions' is an initiative that provides grants to NT business owners, Indigenous enterprises and not-for-profit organisations to help reduce their energy, water and material costs.(DoB). An additional 3.1 MW of capacity was added to the Epuron Uturne Solar facility, Alice Springs and was commissioned in August 2015. This takes the total output from this facility to 4.1MW. Territory Generation takes 100% of the output from this facility under a commercial Power Purchase Agreement.	N/A	N/A
Queensland	50% renewable energy of total energy production by 2050. 10% renewable and low carbon energy by 2020. 1 million solar rooftops by 2020.	Formerly solar feed-in tariff. Invested $300 million into carbon capture and storage (CCS) projects. $50 million *Renewable Energy Fund*. '*Queensland Sustainable Energy Innovation Fund*' provides funds up to $200,000 grants for low carbon technologies. *The Queensland Solar Homes Program*: uses Queensland's bulk purchasing power to lower the costs of solar power systems to Queensland homes.	Requirement of all commercial buildings to meet a minimum 4 star energy efficiency star rating by 2010.	$60 million '*ClimateSmart Home Service*': assists homeowners by having tradespeople install energy efficiency measures and provide energy audits. The $14.25 million '*Energy Choices Program*': includes such measures as school energy efficiency action plans and residential gas installation rebates. '*The Smart Energy Savings Program*': medium and large sized energy users must submit energy savings plans to the government and make these publicly available. Energy savings plans are implemented through the $50 million '*Smart Energy Savings Fund*'.

City/Region/ Municipality	Renewable Energy Targets	Renewable Energy Measures	Energy Efficiency Targets	Energy Efficiency Measures
Queensland		Trialling a 40 megawatt renewable energy reverse auction scheme. Phase-out of electric hot-water installations.		'*The Smart Energy Savings Program*': medium and large sized energy users must submit energy savings plans to the government and make these publicly available. Energy savings plans are implemented through the $50 million '*Smart Energy Savings Fund*'. Queensland *EcoBiz* provides advice to businesses on reaching energy efficiency and environmental standards. Sustainable housing code and policy which sets targets for energy efficiency and requires that sustainability considerations are taken into account during construction, design etc. $60 million solar and energy efficiency program for installing solar and energy efficiency measures across schools and centres.
South Australia	50% of renewable energy generation of total energy production by 2025.	Previously a solar feed-in tariff. This was closed to new entrants during September 2013. New entrants to the solar market may be eligible for the minimum retailer payment. Implementation of renewable energy plans (first enacted in 2011). Appointment of a regionally based wind farm liaison manager. Support for research and development, including for grid development. South Australian government purchases accredited GreenPower™ to satisfy 50% of its electricity requirements by 2014. $2 million to support the next phase of commercial geothermal energy research at the South Australian Centre for Geothermal Energy Research. Annual reporting on emissions intensity of electricity generation. Use of the renewable energy fund for a range of projects including solar, geothermal, wave, fuel algae and bioenergy.	N/A	*Retail Energy Efficiency Scheme* provides incentives for households and businesses to save energy. State specific energy efficiency requirements for air-conditioners. Water heater energy efficiency installation standards (established in 2008). '*Building innovation fund*' to encourage new low carbon and energy efficient designs. *Building Upgrade Finance*: a mechanism which helps commercial buildings to access loans to improve energy, water and environmental performance.

City/Region/ Municipality	Renewable Energy Targets	Renewable Energy Measures	Energy Efficiency Targets	Energy Efficiency Measures
Tasmania	Aim to supply 100% renewable energy by 2020 and export any surplus.	Extended Renewable Energy Loans Scheme. 87% of state energy needs are supplied from hydro and other renewable energy sources. In 2012/13, 93% of the electricity generated in Tasmania came from renewable sources. Tasmanian Energy Strategy, Restoring Tasmania's Energy Advantage, is a whole of Government strategy that includes actions related to renewable energy, energy efficiency and electric vehicles. It also includes a commitment to prudently prepare for a 10 per cent expansion of Hydro electricity supply.	N/A	Creation of residential energy guide for buyers and renters. *Energy Champions program*: "Energy efficiency programs will be delivered to 1 500 public housing properties per annum between 2014 and 2020." Estimated to lead to a net benefit of $46.4 million. Current standards for new housing in Tasmania require a 6-star energy efficiency rating. The 6-star standard applied to all buildings from May 2014.
Victoria	Increase large scale solar power in energy supply to approximately 5% by 2020. 20% of energy production to come from renewable sources by 2020.	Victorian feed-in tariff. Currently this is set at a minimum of 6.2 cents for any business, household or organisation with a system below 100 kilowatt hours. Applicable to solar and other low-carbon systems. Amended powers under the Environment Protection Act to effectively ban new power stations based on current brown coal technologies. Contribution of $33.3 million to CCS development programs. Created a Green Door for renewable energy. This is essentially a one-stop shop for energy projects that produce emissions of 0.5 tCO2/MWh or lower. Intended to streamline funding and approval processes.	Target to improve energy efficiency by 20% on 2010 levels by 2018 for government buildings such as hospitals, schools and offices.	Investing $160 million into the *Greener Government Buildings Program*. Upgrades hospitals, schools and government buildings to improve energy efficiency and environmental performance. *Victorian Energy Efficiency Target* (VEET) ensures that energy retailers meet supply targets by implementing energy efficiency measures into customer households. *Environment Resource Efficiency Plan (EREP)*: Australia's first industrial energy efficiency program started in 2002. All new homes must be built to meet a 5 star energy rating standard (since 2004).
Western Australia	N/A	The *Low Emissions Energy Development (LEED) Fund*: finances innovation and technology projects for demonstration, commercialisation as well local adaptation strategies.	N/A	N/A

Comparing Australian Cities: Energy Targets and Measures

City/Region/ Municipality	Renewable Energy Targets	Renewable Energy Measures	Energy Efficiency Targets	Energy Efficiency Measures
ACT	90% of electricity supply to be renewable by 2020.	Large-scale feed-in tariff and reverse auction scheme. Large scale community solar and wind farms installations. Trial of advanced energy systems in collaboration with the ANU and Canberra Institute of technology. Has created the ACT Smart Energy advice system for businesses. Mapped heating and cooling loads across the ACT. Mapped electricity distribution and provided information on the capacity of substations and feeders to absorb renewable energy generation.	The ACT Energy Improvement Scheme has targets of achieving energy savings of 8.6% per year for Tier 1 (larger) electricity retailers. 20% energy savings per year during the period 2015-2020 for low-income 'priority households'.	Energy Efficiency Improvement Scheme: requires retailers to implement energy efficiency improvements into homes to reach the energy savings target. ACTSmart program provides education, assessment and retrofits, including appliance replacement, for low income households. Minimum Energy Performance Standards (MEPS) for appliances and equipment. Energy efficiency provisions as established under the National Construction Code. Buildings standards linked to EE standards in the Building Code of Australia.
Adelaide	COUNCIL Increase procurement of accredited renewable energy from 20% to 40% in 2008/09 and to 50% thereafter. Reduce GreenPower purchases to a maximum of 35% of total electricity used by 2014.	Greenpower purchases. Incentives for renewable energy purchases (to be implemented) Formerly South Australian solar feed-in tariff Established a *Climate Change Action Initiatives Fund* in 2008. Fund prioritises allocation to projects which reduce energy use and carbon emissions in both the council and community. This fund is created from a 1% levy on rates.	COUNCIL Reduce energy use by 15% by 2015 on 2009/10 levels. Reduce energy use by 15% and carbon emissions by 30% from buildings, Reduce energy use and carbon emissions by 20% from public lighting and traffic signals, Offset Council's emissions through accredited GreenPower and offsets.	Energy use audits and implemented measures to reduce energy use from Council buildings, community facilities and public lighting. Reduction measures include LED lighting retrofits (such as with traffic lights and exit signs), installing lighting controls, upgrading chillers, air-conditioning upgrades and fine-tuning the building management system. Implementing energy efficient public lighting systems.

City/Region/ Municipality	Renewable Energy Targets	Renewable Energy Measures	Energy Efficiency Targets	Energy Efficiency Measures
Adelaide				*Building upgrade finance mechanism* (state based scheme). This mechanism will provide loans to commercial building operators to allow for the implementation of water, energy and environmental efficiency measures. *CitySwitch* energy efficiency improvement program for the commercial building sector.
Brisbane	Council purchases 100 per cent of its electricity from accredited renewable energy sources, or GreenPower. This saves around 80,000 tonnes of emissions each year. In 2013-14, approximately 120,000 tonnes of carbon offsets were purchased. This translates to carbon neutrality for the City of Brisbane Council.	Council's landfill site generates power by methane capture and usage. In 2013-14, 33,545 Mega Watt hours (MWh) of green energy was produced by harvesting landfill gas. The Rochedale Landfill administration building and Willawong and Ferny Grove transfer stations also provide 130 MWh of renewable solar energy.	N/A	Council uses the '*warm mix asphalt green system*' to reduce the production temperature of asphalt. Given that Council uses on average 330,000 tonnes of asphalt annually, this translates to significant reduction in greenhouse gas emissions. Seeking to lower the production temperature of asphalt further in the future. Brisbane is now cleaner and greener with 25,000 mercury vapour lights replaced by energy saving bulbs in suburban streets around the city. This $9 million project has made our streets brighter, safer and more energy efficient. The new lights will generate $500,000 in savings on Council's annual electricity bill. The reduction in energy use is equivalent to 2100 tonnes of carbon dioxide emissions or taking around 550 cars off the road annually.
Hobart	N/A	Solar Hot Water, Insulation and Water Tank Rebates Schemes. *Energy Reserve Fund* of $50,000 for energy efficiency and abatement projects.	N/A	In 2001 council established energy efficiency guidelines for prospective homebuyers and implemented a 20% rebate on building application fees for compliance with HIA sustainable housing provision and 25% for compliance with Australian standards, based on a 2 tiered system. Encouraged applications to meet certain minimum energy efficiency standards. In 2006 council increased the energy efficiency rebate to 100% on the basic planning application fee and the building administration fee when planning and design of new homes or additions incorporate reliable and permanent energy efficiency measures.

City/Region/ Municipality	Renewable Energy Targets	Renewable Energy Measures	Energy Efficiency Targets	Energy Efficiency Measures
City of Melbourne	N/A	Planning on developing an energy map that outlines key areas for energy efficiency as well as renewable energy usage.	In the future the council plans on developing minimum sustainability standards for new buildings and ensuring that all building renovations on greater than 50% of the building reach at least a 5 star energy efficiency rating.	Melbourne has used the Energy Performance Contract since 2010 resulting in emissions savings of 1,560 tonnes CO2-e (carbon dioxide equivalent) per year. This program involves implementing energy efficiency measures including retrofitting 13 of the city's largest buildings. Upgrading street lights in terms of energy efficiency. Trialling low carbon and low energy design in council buildings. The council is creating publicly available NABERs (sustainability ratings for council buildings). 'CitySwitch' Program which encourages commercial office energy efficiency through education and targeted programming.
City of Sydney	30% electricity generation from renewables by 2030. 70% electricity generation from trigeneration by 2030. 100% local energy generation by 2030. No reliance on fossil fuel energy by 2030.	Has started the tender process for a trigeneration system installation which will power Sydney Town Hall and Town Hall House.	N/A	Has retrofitted city owned buildings to comply with new energy and water efficiency standards (achieving a 23% reduction in ghg footprint of council property portfolio) and established a tender process for installing solar pv cells and solar hot water for all council buildings. Upgrading 6,448 city lights to LEDs. Partnership with the *CitySwitch* program to encourage energy efficiency amongst businesses. Has established the Environmental Upgrade Finance Scheme which funds projects which upgrade the water, energy and environmental efficiency of buildings. Smart Green Apartments scheme financially supports 30 smart green apartments. These are linked together through the *SmartBlocks* information sharing system and supported by city environmental grants. Environmental grants are available for innovation, energy efficiency implementation in buildings and assessing building environmental performance.

Comparing Australian States and Territories: Transport and Waste Policies

City/Region/ Municipality	Transport Targets	Transport Measures	Waste Targets	Waste Measures
ACT	Mode-share targets: 7% for cycling, 7% for walking and 16% for public transport (total of 30%) as a percentage of journeys to work by 2026. By 2016 average wait times for public transport should be between 5-10 minutes.	Developing a low emissions transport strategy. Creation of light-rail infrastructure. Expansion of bus networks and implementation of rapid transit corridors. Development of commuter cycle networks. Expansion of Park and Ride and Bike and Ride facilities. Development and delivery of behavioural change programs to encourage sustainable travel.	Achieve a carbon neutral waste sector by 2020.	Investigation of methane capture and waste-to-energy technologies. Expanding bioenergy production. Increasing recycling and increasing the energy efficiency of waste collection and processing.
New South Wales	By 2016 increase trips made to work by public transport in Sydney metropolitan area to 28%.	Increase public transport, active transport and transport network efficiency through the NSW Long Term Transport Master Plan.	By 2021–22, reduce the rate of waste generation Per Capita. By 2016–17, reduce the number of litter items by 40% compared with 2011–12 levels and then continue to reduce litter items to 2021–22. By 2021–22, increase the waste diverted from landfill from 63% (in 2010–11) to 75%. By 2021–22, increase recycling rates for: – municipal solid waste from 52% (in 2010–11) to 70% – commercial and industrial waste from 57% (in 2010–11) to 70% – construction and demolition waste from 75% (in 2010–11) to 80% Reduce detected large scale (greater than 200m3 of waste) illegal dumping in Sydney, the Illawarra, Hunter and Central Coast by 30% by 2016.	Targets and measures are established in the NSW Waste Strategy 2014-2021. Creation of regional Illegal Dumping Squads. Revenue from the 'Waste and Environment Levy" is used to invest in recycling infrastructure, encourage innovation, address illegal dumping and support other waste related policies under the waste strategy. Behavioral programs such as the "Love Food, Hate Waste" program. Investments in recycling infrastructure.

City/Region/ Municipality	Transport Targets	Transport Measures	Waste Targets	Waste Measures
Northern Territory	N/A	N/A	N/A	N/A
Queensland	Reduce Qfleet emissions by 100% by 2020. Remaining emissions will be offset. Minimum GHG standards have been set based on the Australian Government's Green Vehicle Guide.	Ethanol mandate of 5% in fuel mix. Large scale investments in expanding public transport including buses running on compressed natural gas.	N/A	N/A
South Australia	N/A	Extension of tram and train networks. Modernisation of rail, bus and o-bahn networks. Electrification of the Seaford rail line. Way2Go program to encourage active transport.	More than 35% reduction in landfill disposal from 2002-03 level by 2020 and milestone of 25% by 2014. Greater than 5% reduction in waste generation per capita by 2015. Municipal solid waste target of 70% diversion by 2015. Commercial and industrial waste target of 65% diversion by 2012. Construction and demolition waste target of 90% diversion by 2015.	South Australia is in the consultation stage of establishing a new waste management strategy for 2015-2020. Target bans to landfill e.g. white goods, vehicles, large scale organic waste. Promotion of behavioural change, innovation and green purchasing to maximise waste avoidance and recycling. Embedded waste reduction education into vocational education and training courses. Expand existing recycling and collection infrastructure and facilities.

City/Region/ Municipality	Transport Targets	Transport Measures	Waste Targets	Waste Measures
Tasmania	N/A	Encouraging the use of Liquefied natural gas for freight through education programs. "Smart Trips" program organised to educate and encourage behavioural change. 'Freight best practice' program to offer tailored programs to maximise freight efficiency. Creation of public transport transit corridors for connecting major suburban areas to the CBD in Hobart. Investigating suburban light rail scheme. The Tasmanian Government conducted a pilot program that produced business cases for the use of electric vehicles across several private and public sector fleets. As a result of the pilot, 20 electric vehicles will be rolled out across these fleets by the end of 2015.	Reduce government agency waste by 20% on 2015 levels by 2015.	Tasmanian waste and resource management strategy minimises organic waste going to landfill and capture methane, encourage waste service energy efficiency and encourage recycling. Develop a bioenergy strategy aimed at adding value to waste organic materials. In partnership with industry and local government, the Government has committed $200,000 in funding to continue existing investigations of bio-fuels in the Dorset and Huon regions. $550 000 has been committed to pursue the production of bioenergy and 'clean technology' materials from forestry and farm sourced biomass residues as part of the Government's *AgriVision 2050* plan.
Victoria	N/A	Purchase of 2,000 Camry Hybrids built in Melbourne. Established the 50 car strong Victorian electric vehicles trial. Created an offset program for road users as part of the registration process. *TravelSmart* program helps with journey planning, public awareness and infrastructure investment.	N/A	N/A
Western Australia	N/A	N/A	N/A	N/A

Comparing Australian Cities Waste and Transport Policies

City/Region/ Municipality	Transport Targets	Transport Measures	Waste Targets	Waste Measures
ACT	Mode-share targets: 7% for cycling, 7% for walking and 16% for public transport (total of 30%) as a percentage of journeys to work by 2026. By 2016 average wait times for public transport should be between 5-10 minutes.	Developing a low emissions transport strategy. Creation of light-rail infrastructure. Expansion of bus networks and implementation of rapid transit corridors. Development of commuter cycle networks. Expansion of Park and Ride and Bike and Ride facilities. Development and delivery of behavioural change programs to encourage sustainable travel.	Achieve a carbon neutral waste sector by 2020.	Implement the ACT Waste Management Strategy 2011–25. Investigation of methane capture and waste-to-energy technologies. Expanding bioenergy production. Increasing recycling and increasing the energy efficiency of waste collection and processing.
Adelaide	N/A	Reduce carbon emissions from council vehicles and plant by 10%.	N/A	N/A
Brisbane	By 2031: • The number of walking, cycling or public transport trips will increase compared to 2011. • The majority of peak hour trips to the CBD will be by public and active transport. • Travel times and trip reliability across the city will be maintained or improved compared to 2011. • Brisbane's bikeway network will exceed 1700 kilometres. • Bus patronage will reach a target of 120 million annually. • The carbon intensity of the bus fleet will decrease compared to 2013.	Instituting cycling and walking paths with all new road and public transport infrastructure, and expanding busway services to major employment areas, constructing a Pedestrian Master Plan. Carbon offsets for Council vehicles Council purchases carbon credits to offset emissions from fuel used in Council vehicles, including emissions from buses and ferries. In 2013-14 Council offset around 117,000 tonnes of carbon equivalent emissions. Council purchased certified offsets from a methane diversion and industrial waste energy recovery projects.	Total domestic waste generated per annum in 2031 going to landfill will be reduced compared to 2013. Domestic waste recycled/ recovered in 2031 will be increased compared to 2013. COUNCIL GOALS • Reduce waste disposal to landfill by 25% by 2014 • Increase recycling of municipal solid waste by 50% by 2014 • Increase recycling of commercial and industrial waste by 40% by 2014 • Reduce generation of waste by 15% by 2020	91,413 tonnes of material, which is equivalent to 183 Olympic-sized swimming pools, was recycled by Council 10,332 green waste bins were ordered by residents 40,583 residents visited Brisbane's tip shops, where 301 tonnes of unwanted household items were sold 490 new public place recycling bins have been installed across Brisbane since 2008, diverting 294 tonnes of recycling waste from landfill in 2013-14 4743 students and 306 residents took part in the Rethink Your Rubbish schools program 250 residents attended free compost and worm farm workshops 4839 tonnes of e-waste was collected and sent for recycling or reuse between 2006 and 2014

City/Region/ Municipality	Transport Targets	Transport Measures	Waste Targets	Waste Measures
Brisbane		Council's offset purchases means that all our vehicles are essentially carbon free. COUNCIL AIR TRAVEL Council offsets work-related air travel through preferred supplier accredited carbon offset programs Reducing the impact of travel.		137 litter-proof tree grates were installed across the city 50% less litter was counted in the CBD in 2013-14, when compared to 2009 figures 33,545 MWh of green energy was produced at Council's Rochedale Landfill, which abates 146,043 tonnes of carbon dioxide 130MWh of renewable solar energy was provided by Willawong and Ferny Grove transfer stations
Brisbane		BUSES The greenhouse emissions from Council's bus fleet are expected to fall as fuel efficiency initiatives are implemented. Additionally, each full bus equates to taking 40 cars off the road, which reduces both emissions and congestion across the city, while also providing mobility options to all members of the community. Council has around 1200 buses in the fleet, with almost half running on compressed natural gas. Council uses new generation, high-efficiency Enhanced Environmentally-friendly Vehicle (EEV) diesel engine technology for all new buses. BUS UPGRADES The on-board software settings of over 500 of Council's bus fleet will be modified. Adapted gear selection profiles which better meet terrain conditions. Automated five-minute idle shutdown. Disabled kick-down (an accelerator pedal feature mostly designed for highway driving).		

City/Region/ Municipality	Transport Targets	Transport Measures	Waste Targets	Waste Measures
Brisbane		Trials are also underway of low-rolling resistance tyres that have decreased tread depth and reduced energy loss caused by heat generation within the tyre (due to a particular rubber compound additive used). Additionally, a program is being developed to integrate eco-driving techniques and technologies to alert drivers of uneconomical and inefficient driving practices. Council has eight fully electric vehicles in its fleet. These electric vehicles are charged with 100% carbon-free, renewable energy. Council is continuing to utilise hybrid and more fuel efficient vehicles in its fleet. Council currently has over 50 hybrid vehicles, including a truck, in the fleet. Council ensures our vehicles are fit-for-purpose and this has led to a replacement of some vehicles with smaller, more efficient models. Vehicle emissions testing enables Council to keep our heavy diesel vehicles running at optimum efficiency, saving fuel and reducing emissions.		
Hobart	N/A	Developing an integrated bike and pedestrian plan.	N/A	Conduct waste audits and develop waste management strategy.
City of Melbourne	Increase trips using low emissions transport from 51% in 2009 to 60% in 2018.	Use of green asphalt. Developed Bicycle Plan 2012–16 to encourage bicycling and create more accessible and well connected cycling system. A plan for pedestrians is also being developed.	Decreasing waste to landfill by 2018.	Implementation of industry recognised water and waste standards. Precinct based schemes including waste compacters and the Degraves Street Recycling Facility. 'Love your laneway' behavioural change program to encourage waste separation

City/Region/ Municipality	Transport Targets	Transport Measures	Waste Targets	Waste Measures
City of Sydney	N/A	Established the StreetShare and ShareThePath educational programs to encourage cyclist/ pedestrian integration. Investing in CBD and South East light rail. Also considering light rail for George Street. Provision of 650 on-street car-sharing park spaces. $220 million spent on the public domain through actions such as widening footpaths, improving lighting, improving traffic management etc.	N/A[12]	Conducted an e-waste recycling program and events. It has also trialled reverse vending machines. Provision of ten recycling centres for batteries, lightbulbs etc. Upgraded bin rooms of 1,150 buildings.

12 Targets, but all were for 2014 and have already expired.

Comparing Non-Australian States and Regions: Key Parameters

City/Region/ Municipality	Country	Population	GSP Per Capita ($AUD)[13]	Size	Emissions (CO2e)(Mt CO2-e)	Emissions Per Capita (tonnes)	Emissions Intensity (Kg per unit GSP)
ACT	Australia	394,675 (2015)	92,140	2,400 km2	3,934.1 (2014-2015, including Scope 2 emissions)	9.97	0.112
Baden-Württemburg	Germany	10,631,278 (2013)	56,655	35,751 km2	76 (2011)	7.1	0.126
British Colombia	Canada	4,582,625 (2013)	52,911	944,735 km2	61.5(2012)	13.5	0.254
California	United States	38,802,500 (2014)	63,847	403,839 km2	459 (2012)	11.8	0.185
North Rhine-Westphalia	Germany	17,571,856 (2014)	52,883	34,110 km2	305 (2012)	17.3	0.328
Scotland	United Kingdom	5,300,000 (2011)	49,829	78,387 km²	55.67 (2012)	10.5	0.211

13 Converted directly by current exchange rate.

Comparing Non-Australian Cities: Key Parameters

City	Country	Population	Annual Emissions (Mt of $C0_2$-e) [14]	Emissions Per Capita (tonnes)
ACT (Canberra)	Australia	394,675 (2014)	3,934.1 (2013-14, including Scope 2 emissions)	9.97
Antwerp	Belgium	511, 716 (2012)	3.6 (2013)	7
Austin	United States	885,400 (2013)	14 (2010)	15
Bonn	Germany	309,869 (2014)	2 (2010)	6.45
Copenhagen	Denmark	559,440 (2014)	2.1 (2014)	3.8
Hong Kong	China	7,200,000 (2014)	42 (2010)	5.8
London	United Kingdom	8,250,205 (2011)	44.7 (2008	5.4
Mexico City	Mexico	21, 200,000 (2012)	30.7 (2011)	1.4
New York	United States	8,491,079 (2014)	48 (2013)	5.7
Seattle	United States	652,405 (2014)	3.6 (2012)	5.5
Stockholm	Sweden	912,000 (2014)	3.2 (2010)	3.5
Tokyo	Japan	13,216,000 (2012)	62 (2013)	4.7
City of Vancouver	Canada	640, 469 (2014)	2.6 (2013)	4
Wellington	New Zealand	197,700 (2014)	1.3 (2012)	6.6

14 Based on latest emissions inventories where possible, or statistics from the *Carbonn* Registry.

Comparing Non-Australian Cities: GHG Emissions Targets

City/Region/ Municipality	Interim Target(s)[15] [16]	Long Term Target [17]	Legal Form	Progress	International Cooperation	Use of Offsets
ACT	40% below 1990 levels by 2020 (30th of June). 80% below 1990 levels by 2050 (30th June).	Net zero emissions by 2060 (30th of June).	**Legislated** under the *Climate Change and Greenhouse Gas Reduction Act 2010.*	The relevant greenhouse gas inventory has not been released yet and thus it is impossible to accurately track emissions against the established targets.[18]	ICLEI, Compact of States and Regions and Compact of Mayors.	**Yes**, however these are used as a last resort under the ACT Carbon Offsets Policy.
Antwerp	-50% CO2 emissions below 2005 levels by 2020.	Carbon neutral by 2050.	**Implemented** under the Municipal Climate Action Plan/ Sustainable Energy Action Plan.	N/A	ICLEI	**Yes**
Austin	Make all City of Austin facilities, fleets, and operations carbon-neutral by 2020.	Carbon Neutral by 2050.	**Implemented** under the amended *'Austin Climate Protection Plan'* (resolutions 20070215-023 and 20140410-024).	Austin appears to making good progress towards its interim goals with all government facilities now powered by 100% renewable energy. The use of hybrid and non-fossil fuel based vehicles in the municipal fleet has been increased by 60% since 2007.[19]	ICLEI, Compact of Mayors.	**Yes**, the purchase of carbon offsets is allowed and GreenChoice energy is purchased (approximately 400,000 MWh annually).
Bonn	40% below 1990 levels by 2020. 50% per capita below 1990 by 2030.	90-95% below 1990 levels by 2050.	Implemented via Master Plan Energy Policy and Climate Change.	N/A.	ICLEI, Compact of Mayors.	**No/unclear.**
Copenhagen	Reduce community-wide CO2e emissions by 20% from 2005 to 2015.	Carbon neutral by 2025.	Both short-term goals have been **legislated**. Political goal implemented through the "*Copenhagen 2025 Climate Plan*".	They have already exceed their 2015 target with emissions dropping by 31% below 1990 levels in 2014.[20]	C40, Carbon Neutral Cities Alliance, Compact of Mayors.	It does purchase green energy from outside of its municipal borders, but has expressed a political wish not to use other offsets.
Hong Kong	Carbon intensity reduction target of 50% - 60% on 2005 levels by 2020.	N/A.	Political decision adopted after public consultation in 2010.[21] **Not legislated**.	N/A.	C40.	**No/unclear.**
London (UK)	20% by 2015, 40% by 2020 and 60% by 2025 (all below 1990 levels).	At least 80% on 1990 levels by 2050.	Part of "The Mayor's Climate Change Mitigation and Energy strategy".	Recent analysis suggests that London is set to miss its targets.[22]	C40, Carbon Neutral Cities Alliance, Compact of Mayors.	**Yes**.

City/Region/ Municipality	Interim Target(s)[15] [16]	Long Term Target [17]	Legal Form	Progress	International Cooperation	Use of Offsets
Mexico City	N/A.	Aims to reduce its greenhouse gas emissions by 50% below 2000 levels by 2050.	**Not Legislated.**	Mitigation potential of 10 million tonnes would equate to a reduction of 30% by 2020 relative to business as usual emissions. No clear timeline for reporting and reviewing progress.	C40, Compact of Mayors, ICLEI member.	**No/unclear.**
New York City	N/A.	80% on 2005 levels by 2050.	Mayoral commitment and companying strategies.	Emissions have been reduced by 19% on 2005 levels.	Carbon Neutral Cities Alliance, Compact of Mayors, C40.	**No/unclear.**
Seattle	Previously 7% below 1990 levels by 2012.	Carbon neutral by 2050.	**Implemented** through Resolution 31312 which included adoption of the *Seattle Climate Action Plan*.	The 2012 goal of 7% below 1990 levels was met.	ICLEI, Compact of Mayors.	**Yes.**
Stockholm	-44% CO2e emissions on 1990 by 2015 (community emissions).	Carbon neutral by 2050.	Taken as a decision by local council.	N/A.	C40, Carbon Neutral Cities Alliance and has singed the Compact of Mayors.	**No/unclear.**
Tokyo	Target of 25% on 2000 levels by 2020. Cap and trade system had a target of 6% reductions on baseline emissions in the first compliance period, while the second period had a target of 15% up to 2019.	N/A.	**Not legislated.**	So far over 90% of participants have met their commitments under the Tokyo Cap and Trade and the first two commitment periods have been successful. There are annual updates on the cap and trade system. There was an overall progress report in 2010, however there is no clear overall timeline for review.	C40, Compact of Mayors, ICLEI member.	**Yes**, the Tokyo cap and trade system includes the purchase of outside offsets.

City/Region/ Municipality	Interim Target(s)[15] [16]	Long Term Target [17]	Legal Form	Progress	International Cooperation	Use of Offsets
City of Vancouver	33% CO2e emissions on 2007 levels by 2020.	80% CO2e emissions on 2007 levels by 2050.	**Not legislated**. Implemented through the mayor's *Greenest City Action Plan*.	The latest 2013-2014 update report puts the current reduction at -6% on 2007 levels.	ICLEI, Compact of Mayors, Carbon Neutral Cities Alliance.	**No/unclear.**
Wellington	30% CO2 emissions below 2003 levels by 2020.	Reduce CO2e emissions from the community by 80% by 2050 based on 2003 levels.	**Implemented** under The *2013 Wellington City Climate Action Plan* has been adopted by the council.	N/A.	ICLEI.	**No**, offsets purchased outside of the city are allowed but do not count towards the emissions reduction target.

15 Emission targets are in GHG emissions unless stated otherwise.

16 All targets are based on data gathered from the Carbonn database, the UNFCCC's NAZCA databse and cross-referenced against existing official documentation (where available).

17 In general cities are not able to make legislation and instead rely on council decisions and plans of action.

18 Office of the Commissioner for Sustainability and the Environment, 2014. "Implementation Status Report: A report on the implementation of AP2: a new climate change strategy and action plan for the Australian Capital Territory", (Canberra).

19 ICLEI, 2015, see http://www.iclei.org/details/article/austin-on-its-way-to-carbon-neutrality.html

20 There has however been some criticism of Copenhagen accounting for biomass as carbon neutral - http://www.businessinsider.com/afp-copenhagen-faces-bumpy-road-to-carbon-neutrality-2015-7?IR=T

21 The Climate Group, 2011.

22 Climate brief, 2015, see- http://www.carbonbrief.org/blog/2015/01/london-set-to-miss-mayors-climate-change-targets-as-population-booms/

Comparing Non-Australian States and Regions: GHG Emissions Targets

City/Region/ Municipality	Interim Target(s)[23, 24]	Long Term Target	Legal Form	Progress	International Cooperation	Use of Offsets
ACT	40% below 1990 levels by 2020 (30th of June). 80% below 1990 levels by 2050 (30th June).	Net zero emissions by 2060 (30th of June).	**Legislated** under the Climate Change and *Greenhouse Gas Reduction Act 2010*.	The relevant greenhouse gas inventory has not been released yet and thus it is impossible to accurately track emissions against the established targets.[25]	ICLEI, Compact of States and Regions and Compact of Mayors.	**Yes**, however these are used as a last resort under the ACT Carbon Offsets Policy.
Baden-Württemburg	25% below 1990 levels by 2020.	90% below 1990 levels by 2050.	**Legislated** under the 2011 "*Climate Protection Law*".	N/A.	Compact of States and Regions.	**No/unclear.**
British Colombia	Reduce provincial CO2e emissions by 33% below 2007 levels by 2020 based on 2007 levels.	Reduce provincial CO2e emissions by 80% below 2007 levels by 2050.	**Legislated** through the 2014 "*Greenhouse Gas Industrial Reporting and Control Act*".	N/A	Compact of States and Regions, R20.	**Yes**, including through the Carbon Neutral Government program.
California	Reduce to 1990 levels by 2020. 40% below 1990 levels by 2030.	80% below 1990 levels by 2050.	Legislated under 2006 Assembly Bill 23 (for the 2020 target) and a 2015 executive order by governor Brown.[26]	California will need to increase the pace of emissions reductions fivefold in order to meet the 2050 target.[27]	Compact of States and Regions.	**Yes**, offsets are permitted under the cap and trade system.
North-Rhine Westphalia	25% below 1990 levels by 2020. Carbon neutral government operations by 2030.	80% below 1990 levels by 2050.	Legislated under the 2013 "Climate Protection Law".	N/A	ICLEI, Compact of States and Regions.	**No/unclear.**
Scotland	42% below 1990 levels by 2020. 56% below 1990 levels by 2027	80% below 1990 by 2050.	**Legislated** through the *2009 Scottish Climate Change Act*.	Net Scottish emissions in 2012 were 26.4% lower than 1990 levels. This is an average reduction of 1.2% per year, compared to a requirement of 3% per year from now to 2020 to meet the 2020 target.[28]	Compact of States and Regions.	**No/unclear.**

23 Emission targets are in GHG emissions unless stated otherwise.

24 All targets are based on data gathered from the Carbonn database, the UNFCCC's NAZCA databse and cross-referenced against existing official documentation (where available).

25 Office of the Commissioner for Sustainability and the Environment, 2014. "Implementation Status Report: A report on the implementation of AP2: a new climate change strategy and action plan for the Australian Capital Territory", (Canberra).

26 See http://gov.ca.gov/news.php?id=18938

27 Based on data from the CPI California Carbon Dashboard http://climatepolicyinitiative.org/2015/05/01/californias-new-2030-climate-target-aims-to-quicken-the-pace-of-lowering-emissions/

28 The Committee on Climate Change, 2014. "Reducing emissions in Scotland 2015 progress report", (London).

Comparing Non-Australian Cities: Energy Targets and Measures

City/Region/ Municipality	Renewable Energy Target	Renewable Energy Measures	Energy Efficiency Target	Energy Efficiency Measures
ACT	90% of electricity supply to be renewable by 2020.	Formerly large-scale feed-in tariff and reverse auction scheme. Large scale community solar and wind farm installations. Trial of advanced energy systems in collaboration with the ANU and Canberra Institute of technology. Has created *ACTSmart* Energy advice system for businesses. Mapped heating and cooling loads across the ACT. Mapped electricity distribution and provided information on the capacity of substations and feeders to absorb renewable energy generation.	The ACT Energy Improvement Scheme has targets of achieving energy savings of 8.6% per year for Tier 1 (larger) electricity retailers. 20% energy savings per year during the period 2015-2020 for low-income 'priority households'.	*Energy Efficiency Improvement Scheme*: requires retailers to implement energy efficiency improvements into homes with a special focus on low income households. *Energy Efficiency Improvement Scheme: requires retailers* to implement energy efficiency improvements into homes to reach the energy savings target *ACTSmart* program provides education, assessment and retrofits, including appliance replacement, for low income households. Minimum Energy Performance Standards (MEPS) for appliances and equipment. Energy efficiency provisions as established under the National Construction Code. Buildings standards linked to EE standards in the Building Code of Australia.
Antwerp	Increase share of renewables in final energy mix of the community and government operations to 13% by 2020.	Purchase of 100% green energy since 2009. City produces and manufactures much of its own solar PV. Building code simplifies license process for solar panels and small scale wind as well as making a number of standards for energy efficiency.	Goal of 20% energy savings on 2005 levels by 2020.	Phased in installation of energy accounting standards for buildings since 2008. Houses are regulated to efficiency standards of E-level of 60 and a K-level of 30. Ecohuis provides sustainability advice for citizens. Use of thermographic photos to show citizens heat loss in buildings and encourage roof insulation. City offers bonuses and green loans for energy saving retrofits

City/Region/ Municipality	Renewable Energy Target	Renewable Energy Measures	Energy Efficiency Target	Energy Efficiency Measures
Austin	30% of all energy needs to be met through the use of renewable resources by 2020. Install at least 100 MW of solar power by 2020. Establish carbon neutrality for new electricity generation.	*The GreenChoice Program*: facilitated community and municipal procurement of renewable energy. Has done so by allowing residents to purchase green energy certificates at an affordable rate.	800 MW of energy savings by 2020 through efficiency and conservation efforts. Increase energy efficiency in all new private and public sector buildings by at least 75% by 2015.	Introduce building codes that require all new single-family homes to be zero net energy capable by 2015. *Energy Conservation Audit and Disclosure Ordinance*: used to identify and implement energy efficiency retrofitting. Looking to develop a 'carbon neutral' certification to accompany existing green building ratings. Developing an Austin specific carbon calculator. Develop a program that recognises households, businesses and organisation who achieve carbon neutrality.
Bonn	Bonn aims to increase the share of renewable electricity in the portfolio of Stadtwerke Bonn (SWB) on by a minimum of 50% by 2020 and 100% by 2050'.	Central district heating system is powered by a cogeneration plant. SWB provides a green power certification called '*Gruener Strom Label Gold*' (Gold Label Green Electricity). *Bonn+ solar* is an incentive scheme designed to incentivise the installation of complete solar thermal systems for a discounted price. The Bonn Energy Agency provides advice on energy efficiency, renewable energy, energy certificates etc. SWB has invested around 80 million euros for the expansion of the North thermal power station as well as other projects such as the offshore wind farm Borkum West in the North Sea. *Solardachkataster* (solar roof register): internet based platform which provides estimates for both commercial and private houses on how profitable solar pv installations would likely be.	N/A	Established standards of KfW Efficiency House 55th. Exemptions are made for houses whose heating is supplied by 50% or more from renewable sources. SWB provides smart energy meters as well as an online portal and mobile app to access consumption data. The site also contains energy savings tips and advice. Binding energy efficiency standards for building on publicly owned land.

City/Region/ Municipality	Renewable Energy Target	Renewable Energy Measures	Energy Efficiency Target	Energy Efficiency Measures
Copenhagen	Increase share of renewables in final energy mix of the community to 100% by 2025. Energy production to be greater than consumption. All district heating and cooling will be carbon neutral by 2025. Installation of solar cells equalling 1% of energy consumption.	Land-based and offshore wind turbine installation. Use of biomass through combined heat and power plants. Partnership bidding for state wind turbine projects. Purchase of new heat generation units in Copenhagen.	Street-lighting will consume 50% less energy. 10% reduction in household energy consumption on 2010 levels. 20% reduction in commercial energy consumption and 20% reduction in heat consumption on 2010 levels.	Government supported retrofitting programs. Guidelines, standards and procedures which mandate building improvement to meet minimum energy and environmental standards. Online forum that provides publicly available data on energy and heat consumption.
Hong Kong	Decrease energy intensity by at least 25% on 2005 levels by 2030.[29]	All coal fired power stations will be retired by 2030. No new plants have been built since 1997. Hong Kong is installing 100 offshore wind turbines for a capital cost of $8-10 billion. These are expected 1-2% of total energy demand in 2020. Proposed energy mix for 2020 is 50% nuclear, 40% gas, 3-4% renewable and less than 10% coal.	N/A	Building Energy Codes and Building Energy Efficiency Funding Scheme. These are policies specifically aimed at improving building. The former sets a minimum efficiency standard in buildings, and the latter encourages the adoption of efficiency measures by demonstrating cost savings and providing financing.
London (UK) [30]	N/A	Renewable energy feed-in tariff. Investing in waste-to energy projects. Creating a decentralised energy program aimed at the large scale deployment of low-carbon energy supply. “The Green Enterprise District”- a cluster of low-carbon businesses to draw in large scale investment for the research and development of low-carbon technologies.	RE:NEW program aims to retrofit 1.2 million homes by 2015 with energy efficiency and renewable energy measures.	RE:CONNECT programme has ten low carbon zones, each experimenting with energy efficiency and renewable energy measures. The successful zones will be expanded. RE:FIT- retrofitting public buildings in London. 2000 buildings already committed to retrofits.

City/Region/ Municipality	Renewable Energy Target	Renewable Energy Measures	Energy Efficiency Target	Energy Efficiency Measures
London (UK) [30]		£100 million London Green Fund is looking to leverage another £100 million through private sector financing. Creation of a GIS based London heat map to help with the large-scale implementation of renewable energy. Team of experts established to aid with advice and consultation in establishing low-carbon projects.		
Mexico City	N/A	N/A	N/A	Electric power savings program that works with wells and pumping plants.
New York	Increase solar power capacity by 250 MW over the next ten years on privately-owned property.	Clean energy tech pilots occurring in city owned buildings throughout the city.	Implement carbon neutral building construction standards by 2025.	Creating a water and energy 'retrofit accelerator' to help identify in-need buildings and implement corrective measures in the quickest manner possible through streamlined information. 'Greener, Greater, Buildings Plan'. 'New York City Energy Efficiency Corporation (NYCEEC)' is looking to provide innovative funding and incentives for energy efficiency and renewable energy installation, such as through the modification of housing tax credit schemes. Deep energy retrofit program that will be enhanced by being streamlined in terms of contracts and implementation. Modern rehabilitation projects require "Green" capital assessment in order to be financed by the city. Possess a voluntary carbon reduction program that they will seek to expand to new sectors and participants. GreeNYC- public education initiative to help citizens to live more sustainably and aid with energy efficiency. Have set energy performance and sustainability standards for buildings that they will look to upgrade. Possess a voluntary carbon reduction program that they will seek to expand to new sectors and participants.

City/Region/ Municipality	Renewable Energy Target	Renewable Energy Measures	Energy Efficiency Target	Energy Efficiency Measures
Seattle	N/A	N/A	10% reduction in energy use for commercial buildings by 2030 and 20% for residential buildings (both on 2008 levels). 25% reduction in the GHG intensity of commercial and residential building use by 2030 on 2008 levels.	Plan for the wide deployment of smart meters. Mandatory energy audits of particularly large and inefficient buildings. Piloting a retro-commissioning incentive program for implementing energy efficiency measures in commercial buildings. Have increased energy efficiency standards through the Seattle Energy Code. Have streamlined permit process for sustainable constructions through the "Living Building" and "Deep Green Pilot Program".
Stockholm	Fossil-fuel free by 2050.	Moving from oil-fired heating to heat pumps. Converting oil-fired heating and district heating to heating through biofuels.	N/A	Introduction of energy efficiency standards by Stockholm City Council for new building developments. Production of district cooling through the use of cold water from the lakes and sea.
Tokyo	Aim to increase the ratio of renewable energy to approximately 20% of Tokyo's energy consumption by 2020.	Subsidy program for solar thermal utilisation systems. Inter-regional partnership on renewable energy in partnership with Aomori Prefecture and Chiyoda Ward governments. Establishment and application of the "Green Heat Certificate System" to expand solar heat utilization.	65% of houses to be built in the Tokyo Metropolitan Area to meet next generation energy conservation standards by 2015.	Tokyo launched world's first urban emissions cap and trade scheme in April 2011. 1,100 buildings were involved in the first year. 13% CO2 reduction in first year and further 10% in the following year. Buildings over a certain size must participate in the scheme and reduce emissions. Council funded LED installations, efficient heat pumps, energy saving controls and the implementation of high-efficiency air-conditioners. 'Environmental Collateralized Bond Obligation' helps small and medium sized businesses raise funds for emissions reductions. 'Energy Efficiency Labelling System of Home Appliances' program. Tokyo 2007 Energy Conservation Specifications e.g. 'newly formulated specifications will increase the thickness of roof thermal insulation material by about 50% (from 50mm to 75mm) and the thickness of outer wall thermal insulating material by two times'. 'Energy Conservation Performance Certificate Program': a program which aims to showcase building energy efficiency.

City/Region/ Municipality	Renewable Energy Target	Renewable Energy Measures	Energy Efficiency Target	Energy Efficiency Measures
Tokyo				Tokyo 2007 Energy Conservation Specifications e.g. 'newly formulated specifications will increase the thickness of roof thermal insulation material by about 50% (from 50mm to 75mm) and the thickness of outer wall thermal insulating material by two times'. 'Energy Conservation Performance Certificate Program': a program which aims to showcase building energy efficiency.
City of Vancouver	N/A	Government supports community based renewable energy projects such as the Southeast False Creek Neighbourhood Energy Utility (NEU) by helping to identify utility partners and securing agreements from large developments to source their energy from them.	All buildings constructed post 2020 to be carbon neutral in operations. To reduce GHG emissions and energy use in existing buildings by 20% on 2007 levels.	2014 Vancouver Building By-Law sets stringent high-energy performance standards for new buildings. Commercial and office building standards must be 15% better than previous legislation. Building code updates require renovations to meet minimum energy efficiency standards. "Green Landlords Pilot Program"- helped landlords to identify areas for energy savings and aid in retrofits and energy efficiency implementation.
Wellington	Wellington already produces more renewable electricity than they consume.[31]	N/A	N/A	'Smart Energy Capital' program aims to provide co-financing for energy efficiency research.

29 Political pledge under the 2007 APEC summit that is likely to be met under business-as-usual projections.

30 Recent analysis suggests that London is set to miss its targets - http://www.carbonbrief.org/blog/2015/01/london-set-to-miss-mayors-climate-change-targets-as-population-booms/

31 2013, Wellington City council. "Wellington City's Climate Change Action Plan".

Comparing Non-Australian States and Regions: Energy Targets and Measures

City/Region/ Municipality	Renewable Energy Target	Renewable Energy Measures	Energy Efficiency Target	Energy Efficiency Measures
ACT	90% of electricity supply to be renewable by 2020.	Formerly large-scale feed-in tariff and reverse auction scheme. Large scale community solar and wind farm installations. Trial of advanced energy systems in collaboration with the ANU and Canberra Institute of technology. Has created *ACTSmart* Energy advice system for businesses. Mapped heating and cooling loads across the ACT. Mapped electricity distribution and provided information on the capacity of substations and feeders to absorb renewable energy generation.	The ACT Energy Improvement Scheme has targets of achieving energy savings of 8.6% per year for Tier 1 (larger) electricity retailers. 20% energy savings per year during the period 2015-2020 for low-income 'priority households'.	E*nergy Efficiency Improvement Scheme*: requires retailers to implement energy efficiency improvements into homes with a special focus on low income households. *Energy Efficiency Improvement Scheme*: requires retailers to implement energy efficiency improvements into homes to reach the energy savings target. *ACTSmart* program provides education, assessment and retrofits, including appliance replacement, for low income households. Minimum Energy Performance Standards (MEPS) for appliances and equipment. Energy efficiency provisions as established under the National Construction Code. Buildings standards linked to EE standards in the Building Code of Australia.
Baden-Württemburg	80% of energy used within the region to be supplied by renewable sources by 2050. They are also seeking a reduction of 50% in energy consumption by 2050. Aim to increase current 20% share of renewable energy to 40% by 2020.	New state planning act. Wind energy decree. Planning maps for wind power plants. Makes use of biomass and endorses 'bioenergy villages'. 'Renewable heating act': This creates the compulsory installation of a percentage of renewable energy for heating in any renovation.	Aims to improve energy productivity by 2% per year up to 2020.	Established the *Environmental Technology and Resource Efficiency Centre* which is a state agency which coordinates activities and transfers science to businesses. *Zukunft Altbau'* program for awareness-raising on energy savings. *EnergieSparCheck*: co-financing improvements in private houses. *KlimaschutzPLUS*: providing grants for the renovation of public buildings.
British Colombia	Legislated that 93% of electricity generation has to come from clean and renewable sources.	Revenue neutral carbon tax that covers essentially all fossil fuels including gasoline, diesel, coal, propane etc. The price started at $10 and increased by $5 each year reaching $30 per tonne in 2012. Any coal thermal electricity facilities need to produce zero GHGs.	Reduce energy usage by households by 20% on 2004 levels by 2020. Reduce overall electricity demand growth by 66% on 2004 levels by 2020.	Carbon Neutral Capital Program has distributed $39 million since its creation to help school, health authorities and secondary institutions decrease their carbon footprint and institute energy saving measures. Continuous Optimisation Program offers tools and incentives for participants to create and maintain energy efficient buildings and infrastructure.

City/Region/ Municipality	Renewable Energy Target	Renewable Energy Measures	Energy Efficiency Target	Energy Efficiency Measures
British Colombia				All new public buildings must be built to an LEED gold standard or better. Has adopted energy efficiency standards cover a range of products including dishwashers, gas-fired furnaces, small battery charging systems etc.
California	Increase renewable resources to 33 percent of the state's energy consumption by 2020. Increase renewable resources to 50 percent of the state's energy consumption by 2030.	2013 cap and trade system (now linked with Quebec's). Climate credits distributed to a number of households and utilities as part of the scheme and can be used to purchase energy efficiency measures. Standards for energy utilities prevent long-term investment in GHG-intensive infrastructure. Renewable energy portfolio standard program.	N/A	New green efficiency and environmental standards used for homes, commercial buildings as well as appliances and other 'plug loads'. The *California Public Utilities Commission* verifies energy savings claims made by major utilities. *California Clean Energy Jobs* Act provides funding for energy efficiency and renewable energy projects in schools and universities. 2012 standards on the energy efficiency of state buildings.
North Rhine-Westphalia	Aim to increase wind power to 15% share of energy production by 2030.	NRW Energy Agency working in technology development, research, awareness raising and demonstration and deployment.	N/A	NRW Energy Agency helps companies in improving energy efficiency. State supported consultancies provide free energy advice, particularly on retrofitting and renovations to improve energy efficiency. 'The project "100 Climate Protection Housing Estates in North Rhine-Westphalia" aims to consistently reduce thermally generated CO2 emissions in housing developments (new and rehabilitated buildings) through a combination of energy efficiency measures and a stronger use of renewable energy sources.' "Heat pumps market place NRW" has a target to increase the number of heat pumps installed in NRW by 2020 to 200,000.

City/Region/ Municipality	Renewable Energy Target	Renewable Energy Measures	Energy Efficiency Target	Energy Efficiency Measures
Scotland	Generate 100% of equivalent gross electricity demand from renewable sources by 2020 (interim target of 50% by 2015). Generate 30% of overall energy demand from renewable sources by 2020. Reduce final energy demand in Scotland by 12% by 2020 compared to 2005–2007 average demand, covering all fuels and sectors. Enable local and community ownership of at least 500MW of renewable energy by 2020. Demonstrate carbon capture and storage (CCS) at commercial scale in Scotland by 2020, with full retrofit across conventional power stations thereafter by 2025–30. Source 11% of heat demand from renewable sources by 2020, and to have a largely decarbonised heat sector by 2050.	Renewables obligation investment. 2012 "£103 million Renewable Energy Investment Fund (REIF)" designed to support renewable energy through grants, guarantees and loans. Part of the GB-wide Feed in Tariff. Advice, support and loans provided to business and communities through the "Government Community and Renewable Energy Scheme". Financial support for a number of pilot CCS projects. Seek transmission system upgrades and increased interconnection capable of supporting the projected growth in renewable capacity. Scottish Microgeneration certification scheme (MCS).	Reduce final energy consumption by 12% by 2020.	Behavioral change programs to encourage energy efficiency such as the "Learning for Change" program which is targeted towards schools, colleges and universities. The Scottish government's "climate change Behaviours research programme" aims to research how behaviours can be changed towards energy efficiency and implement appropriate research-based measures in the future. Financial and technical support for energy efficiency retrofits. The "energy and resource efficiency service" actively promotes energy efficiency amongst Scottish business and provides technical advice. The ViBes (Vision in Business for the environment of Scotland) judges' special award in December 2010 on energy efficiency. New energy standards in October 2010, which will deliver a 30% reduction in carbon dioxide emissions from new buildings when compared to 2007 standards.

Comparing Non-Australian Cities: Transport and Waste Policies

City/Region/ Municipality	Transport Targets	Transport Measures	Waste Targets	Waste Measures
ACT	Mode-share targets: 7% for cycling, 7% for walking and 16% for public transport (total of 30%) as a percentage of journeys to work by 2026. By 2016 average wait times for public transport should be between 5-10 minutes.	Developing a low emissions transport strategy. Creation of light-rail infrastructure. Expansion of bus networks and implementation of rapid transit corridors. Development of commuter cycle networks. Expansion of Park and Ride and Bike and Ride facilities. Development and delivery of behavioural change programs to encourage sustainable travel.	Achieve a carbon neutral waste sector by 2020.	Implement the ACT Waste Management Strategy 2011–25. Investigation of methane capture and waste-to-energy technologies. Expanding bioenergy production. Increasing recycling and increasing the energy efficiency of waste collection and processing.
Antwerp	Aims to have a continuous bike route through city territory by 2020.	Has established a standard obstacle free width of 1.5 meters for footpaths. Expanding pedestrian areas in city centres. Climate considerations have been integrated into spatial planning with the aim to increase energy efficiency and active travel through spatial planning.	N/A	N/A
Austin	N/A	Use of Plug-In Everywhere Network which has 186 electrical vehicle charging stations, Purchase of hybrid and electric vehicles.	Aim to reduce by 20% the per capita solid waste disposed to landfills by 2012. Divert 75% of waste from landfills and incinerators by 2020, and 90% by 2040.	Zero waste strategic plan. Zero Waste initiatives could reduce greenhouse gases by nearly 500,000 metric ton carbon equivalent. Creation of green campuses and resource recovery parks. Improve and expand existing regional and local reuse, recycling and composting facilities and initatives. Aim to increase Commercial-Sector Recycling, Remove Barriers to Composting, Reduce Agricultural Emissions through Composting

City/Region/ Municipality	Transport Targets	Transport Measures	Waste Targets	Waste Measures
Bonn	Bonn aims to increase the % of total traffic made up from cycling from 12% to 25%.	The bicycle network is being renovated and expanded by 51.9 km. Pedestrian areas, particularly in the city centre have been expanded. Has created a package to support the purchase of electric vehicles.	N/A	Waste to energy initiatives initiated by SWB, including the central district heating plant.
Copenhagen	By 2025 75% of all trips will be taken by bicycle, on-foot or by public transport. By 2025 50% of trips to work or school will be taken by bicycle. 20-30% of all light vehicles to use new fuels by 2025. 30-40% of all heavy vehicles to use new fuels by 2025. Make transport carbon neutral and have 20% more passengers on public transport compared to 2009 by 2025.	Construction of 28 bicycle superhighways covering over 300kms. The superhighways use improved signage, synchronised traffic lights and air pumps to help improve cyclist speed. Estimated to reduce public health expenditure by $55 million per year. Extension of metro and public transit systems. Implementing intelligent, efficient, IT controlled signalling systems, refurbishment of public stations. Purchase of 500 electric cars and provision of 500 electric car spaces, applying environmental standards on public transport providers.	20 % reduction in waste to incineration by 2018. 45 % of household waste to recycling.	Biogasification of organic waste, particularly for district heating. Construction of new and efficient waste treatment facility. Ban on landfill of organic waste (since 1997). 5 recycling centres and 6 small recycling centres. Free of charge (per visit) - fee paid on an annual basis. “Recycling is Gold” information campaign.
Hong Kong	Increased vehicles running on alternative fuels. Suggestion of 30% of private cars, 15% of buses and goods vehicles are hybrid and EVs or other vehicles with similar performance by 2020 Implementation of average fleet efficiency standards to ensure the new vehicles are 20% more energy efficient than the 2005 market average.	Blending of transport fuels with 10% ethanol or biodiesel by 2010.	N/A	“Development and full operation of one integrated waste management facility (IWMF), two organic waste treatment facilities (OWTFs), and one sludge treatment facility; and (b) full utilisation of the recovered landfill gas and gas generated from waste water treatment.” On completion before 2020 the two OWTFs will have a treatment capability of 400-500 tonnes per day. Waste to energy facilities are expected to meet 1-2% of total energy demand in 2020.

City/Region/ Municipality	Transport Targets	Transport Measures	Waste Targets	Waste Measures
London (UK)[32]	To introduce 100,000 electric vehicles into London as soon as possible.	Investing in electrical vehicle charging stations and expecting 100,000 electrical vehicles to enter the streets of London. Implementing low-carbon buses, including 300 hybrid buses. Looking to pioneer a cost-effective carbon neutral taxi model by 2020. Encourage active transport by extending public transport and cycling networks. Use of bicycling superhighways as well as cycle hire schemes e.g. the Barclay Cycle Hire scheme. Introduction of the 'New Bus for London' whose fuel consumption is 40% more efficient than a conventional diesel powered double decker bus.	Achieve zero municipal waste direct to landfill by 2025. Reduce the amount of household waste produced in 2008/09 from 970kg to 790kg per household by 2031. Increase London's capacity to reuse or repair municipal waste from approximately 6,000 tonnes per annum in 2008 to 40,000 in 2012 and 120,000 in 2031. Recycle or compost at least 45% of municipal waste by 2015, 50% by 2020 and 60% 2031 The management of London's municipal waste to achieve annual greenhouse gas emissions savings of approximately: – 1.2 million tonnes of CO2eq in 2015 – 1.4 million tonnes of CO2eq in 2020 – 1.6 million tonnes of CO2eq in 2031 To generate as much energy as possible from London's organic and non-recyclable waste in a way that is no more polluting in carbon terms than the energy source it is replacing. This is estimated to be possible for about 40% of London's municipal waste after recycling or composting targets are achieved by 2031.	Information campaigns such as the recycling roadshow, Love Food Hate Waste campaign and no junk mail campaigns. Explore options to produce energy through food waste recycling, including Anaerobic Digestion (AD) plants.

32 Recent analysis suggests that London is set to miss its targets - http://www.carbonbrief.org/blog/2015/01/london-set-to-miss-mayors-climate-change-targets-as-population-booms/

City/Region/ Municipality	Transport Targets	Transport Measures	Waste Targets	Waste Measures
Mexico City	N/A	As part of the ProAire program cars were banned in the metropolitan area on one day per week and the BRT Metrobús was established, which is the longest of its kind in Latin America. The Metrobus system has five lines and services 800,000 per day. Based on pre-boarding and magnetic tickets. Implemented the EcoBici bike sharing program. EcoBici program only costs $30 US and has quadrupled to include 250,000 stations and 4,000 bicycles. Scrapping of microbuses, creation of metro corridors concession, introduction of new metrobus corridors, and schemes to increase intermodal transport in key areas of city. Develop and research ways to better regulate and manage freight, which is the largest source of black carbon.	N/A	Use of technological upgrading to make use of solid waste output.
New York	N/A.	Increase pedestrian islands and extend public transport system.	Goal of diverting 75% of solid waste away from landfill by 2020.	N/A
Seattle	Triple the 2007 levels of bicycling by 2017. Reduce GHGs emission intensity of travel by 75% 2030 on 2008 levels.	$365 million “Bridging the Gap” levy for transportation improvements and maintenance. Looking to prioritise cycling and pedestrian investments. Looking to create a “Motor Vehicle Excise Tax”. Creation of new bus corridors and city centre transit connector. Expanding bike parking, bike sharing program, bike racks and creating new cycling paths that are separated from traffic. Streamlining permit system for electric vehicles and constructing charging stations. E-Park program helps residents find parking in an expedited fashion and thus decrease unnecessary usagecongestion and emissions.	70% Diversion Rate by 2022. 50% reduction in methane emissions by 2020 on 2008 levels.	Opt-out programs for junk-mail. Looking to ban a number of materials from landfill waste in order to increase recycling e.g. bricks, concrete etc. Business programs for reuse and organic waste recycling.

City/Region/ Municipality	Transport Targets	Transport Measures	Waste Targets	Waste Measures
Stockholm	N/A	Phase-in of 'clean fuel' vehicles through regulations and standards. Switching from diesel to renewable energy to power public transport buses. Use of a congestion tax with exemption for clean energy vehicles. Expansion of cycling infrastructure and lanes. Investment in public transport, including biofuel powered buses.	At least 40% of food waste will be collected as part of a separate stream for biogas production by 2016. At least 60% of phosphorous compounds in waste water will be returned to production land, of which at least half will be farmland, by 2016.	27 % of the waste produced by Stockholm citizens is recycled as material or biogas. 69 % is turned into production of district heating. 5 % is biologically treated.
City of Vancouver	Majority of trips to be taken by foot, bicycle or public transport by 2020. Reduce average distance driven by residents by 20% on 2007 levels by 2020.	Expanded bicycling and pedestrian networks and improved the safety, bridge and bypass access of cycling and pedestrian routes. Improve use through convenience and safety.	Reduce solid waste flow to landfill by 50% on 2008 levels by 2020.	Waste-to-energy methane capture practiced at Vancouver landfill. Expanded Green Bin (started in 2013) organic waste collection and composting access to more households. Launched world's first cigarette butt recycling program. Have installed 160 public recycling receptacles with more on the way.
Tokyo	N/A	Bioethanol selected as a product of support under the Green Purchasing Guideline. Use of traffic volume monitoring and analysis.	N/A	Pyrolosis and gasification waste-to-energy plants. All incineration plants in 23 wards generate power from waste and supply heat to nearby welfare facilities, etc. Latest facilities have achieved a power generation efficiency of more than 20%. There are three facilities that supply heat for district heating and cooling systems. Eight new efficient waste treatment and recycling plants have been opened under the "Super Eco-Town project".
Wellington	N/A	Encourage fuel efficiency and low carbon transport as well as more walking and cycling. Support compact city development and electric vehicle pilot program. Updating Wellington transport strategy with a special focus on reducing emissions.	N/A	Create regional waste education program, research improved sewage sludge treatment, improve product packaging stewardship and expand the Kai to Compost program.

Comparing Non-Australian States and Regions: Transport and Waste Policies

City/Region/ Municipality	Transport Targets	Transport Measures	Waste Targets	Waste Measures
ACT	Mode-share targets: 7% for cycling, 7% for walking and 16% for public transport (total of 30%) as a percentage of journeys to work by 2026. By 2016 average wait times for public transport should be between 5-10 minutes.	Developing a low emissions transport strategy. Creation of light-rail infrastructure. Expansion of bus networks and implementation of rapid transit corridors. Development of commuter cycle networks. Expansion of Park and Ride and Bike and Ride facilities. Development and delivery of behavioural change programs to encourage sustainable travel.	Achieve a carbon neutral waste sector by 2020.	Implement the ACT Waste Management Strategy 2011–25. Investigation of methane capture and waste-to-energy technologies. Expanding bioenergy production. Increasing recycling and increasing the energy efficiency of waste collection and processing.
Baden-Württemburg	N/A	General traffic plan and the concept of integrated environmental mobility whereby planning considers transport by foot, bicycle and public transport in an interconnected manner.	The Waste Management Plan 2015 calls six priority areas: biowaste, green waste, recyclable materials, electronic waste, sewage sludge and construction waste. In these fields, the state government plans to increase volumes, optimize energy recovery and recycling and improve the recovery of raw materials, BVSE reports.	N/A
British Colombia	Replace half of its fleet (approximately 500 buses) with lower carbon alternatives over the next 5 years. Decrease of 10% in carbon intensity of transport fuels based on 2004 levels by 2020 and 5% renewable content in gasoline.	Replacement of old buses with new versions which run on compressed liquid gas. 'Renewable and Low Carbon Fuel Requirements Regulation' allows for benchmark setting of amount of renewables in transport fuel mix. $14.3 million CAD Clean Energy Vehicle (CEV) to help incentivise the deployment of clean energy vehicles and provide charging point infrastructure. Greenhouse Gas Reduction (Clean Energy) Regulation in 2012: allows utilities to provide incentives for the purchase of LNG vehicles.	N/A	British Colombia has one waste to energy treatment plant.

City/Region/ Municipality	Transport Targets	Transport Measures	Waste Targets	Waste Measures
California	"Zero emission vehicle (ZEV) regulation" will aim to have 1.5 million zero emissions vehicles on state roads by 2025.	"California's Low Carbon Fuel Standard"- developed in 2011 and sets standards on fuel mixes and use. Use of California GHG vehicle standards developed in 2002 and extended in 2012. Plan to move regulations to cover heavy vehicles and explore the use of high-speed rail and sustainable freight.	75% composting and recycling of solid waste by 2020.	New organics management approach which includes using organic waste for feedstock and energy production.
North Rhine-Westphalia	The region is also pioneering electro-mobility and aiming to bring 250,000 sustainable vehicles into the region by 2020, including electric powered trains.	'The North Rhine-Westphalia Hydrogen Highway' is attempting to make hydrogen vehicles more competitive and easily deployed through creating a hydrogen pipeline from Aachen to northern Ruhr and develop accompanying hydrogen-fuelled public buses and fuelling stations.	N/A	North Rhine-Westphalia has 15 anaerobic digestion plants and 90 composting plants.
Scotland	Goal of at least 10% of all journeys made by bike by 2020. To provide electric vehicle charging infrastructure in all Scottish cities. Goal to reach average efficiency for new cars of less than 95 gCO2/km.	Personalised travel planning provided through the "Smarter Choices Smarter Places programme." Government funded electric vehicle infrastructure projects. "ChargePlace Scotland" initiative which allows for free public charging of electric vehicles. EU directives on fuel efficiency. "Energy Saving Trust's Low Carbon Transport Loan Fund" has funded a number of workplace travel plans. "Scottish Green Bus Fund" financially supports the acquisition of low carbon buses. Expansion of cycling infrastructure.	Targeted proportion of household waste recycled/composted/reused: 40% by 2010; 50% by 2013; 60% by 2020; 70% by 2025. Recycling 70% of all waste (including commercial and industrial waste) by 2025 Reducing the proportion of total waste sent to landfill to a maximum of 5% of all waste by 2025."	Ban on recycling going to waste (2014). Ban on biodegradable waste going to landfill (to be phased in during 2021). All organisations and businesses present dry recyclables (metals, plastics, paper, card and glass) for collection (since 2014). Food waste businesses to present food waste for separate collection (over 50 kg of waste from Jan 2014 and over 5 kg of waste from Jan 2016). Local authorities provide a recycling service to all households (since 2014). Local authorities to offer a food waste recycling service in non-rural areas from 1 January 2016.

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SUB-NATIONAL CLIMATE POLICIES
How does the ACT compare?

PART 2 Data tables

ACT ClimateChangeCouncil CCC