

ACT's Pathway to Net Zero Emissions

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Event's Title: Starting the Transition to Zero Emission Societies

UNFCCC COP22 Marrakesh

Mini-side Event UN Climate Change Studio

15/11/2016



Full proceedings: http://inforse.org/europe/conf16_COP22.htm

Canberra as a city

- Australia's capital city.
- Seat of Australia's Federal Government.
- Population 400,000.
- ACT Government unique in Australian context to combine both city (local) and state government jurisdiction.



Balloons Aloft

Australian Capital Territory



Canberra is the renewable energy capital of Australia

World leading in climate change targets.

- 100% renewable electricity by 2020.
- 40% emissions reduction from 1990 level by 2020.
- Net zero emissions by 2050 (at the latest).
- Developing firm interim targets to 2050.

Policy Framework



ACT Planning Strategy



Transport for Canberra



ACT Nature Conservation Strategy



Water Strategy



Draft ACT and Region Catchment Strategy

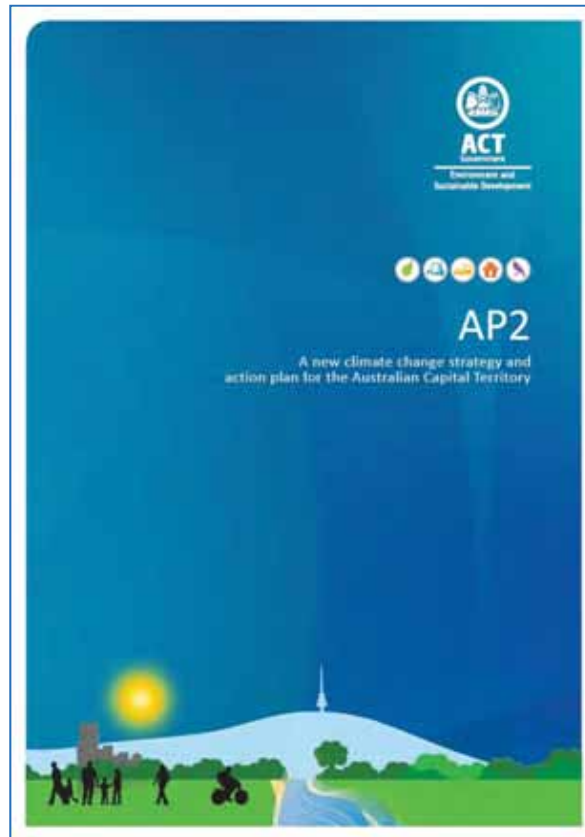


AP2



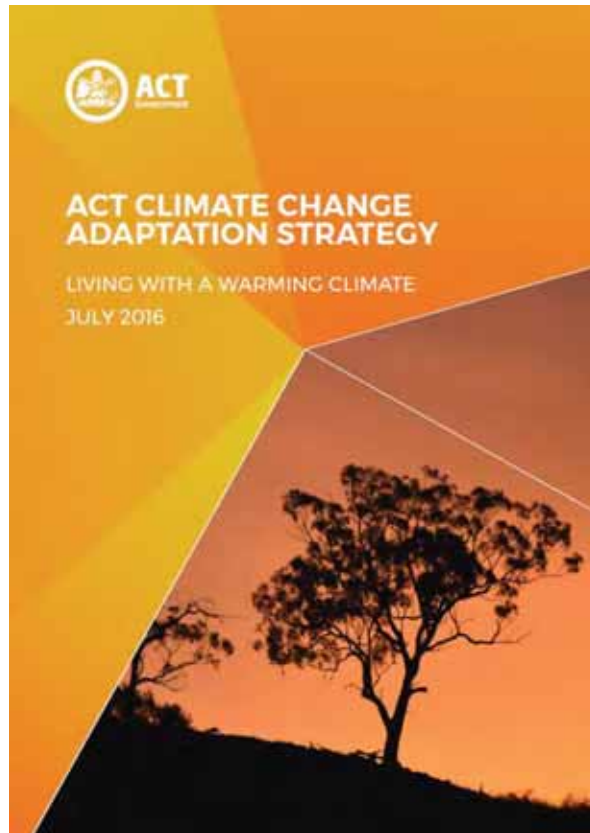
Adaptation Strategy

ACT Climate Change Action Plan 2 (AP2)



- Released October 2012.
- AP2 pathway - 40% of 1990 levels by 2020.
- 18 Actions across key sectors:
 - Residential, Non-residential, Transport, Waste, Energy supply, Adaptation, Monitoring and reporting.
- Three supporting actions:
 - Carbon Neutral Government Framework, Social Impacts and Cost of Living Review, ACT Greenhouse Gas Inventory Update.
- Progress reports are released every six months.
- Reviewed in 2015 with follow up plan in 2017.

ACT Climate Change Adaptation Strategy



- Sectoral approach working throughout region:
 - community health and wellbeing
 - disaster and emergency management
 - settlements and infrastructure
 - water
 - natural resources and ecosystems.
- Public consultation on draft Strategy concluded – informed 800+ people and received 170+ formal submissions.

Adapting to a changing climate

ACT CLIMATE IMPACTS



Climate impacts - 10 year millennium drought



timoss.deviantart.com

Googong Dam in 2002



The Canberra Times 2002

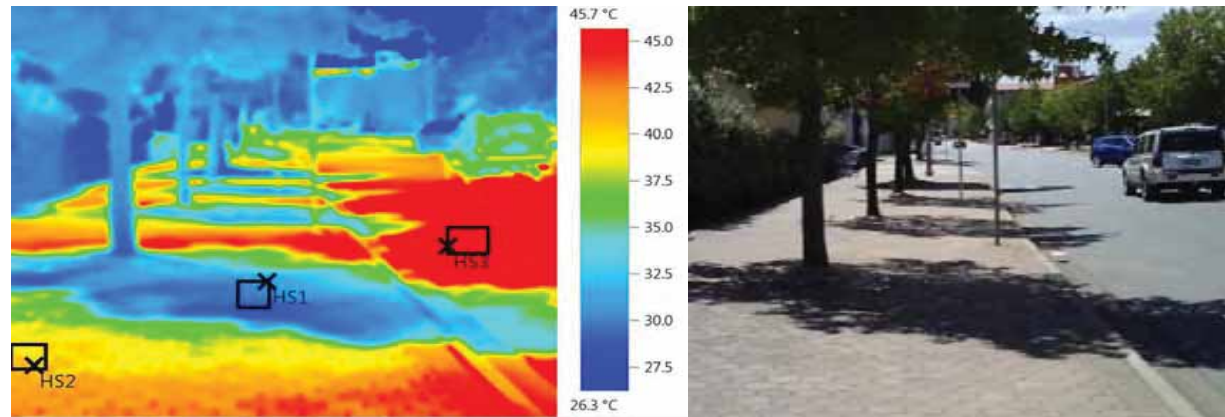
Climate impacts - 2003 Canberra firestorm

bushfirefront.com.au

bushfirefront.com.au

bushfirefront.com.au

Climate impacts - heat island effect



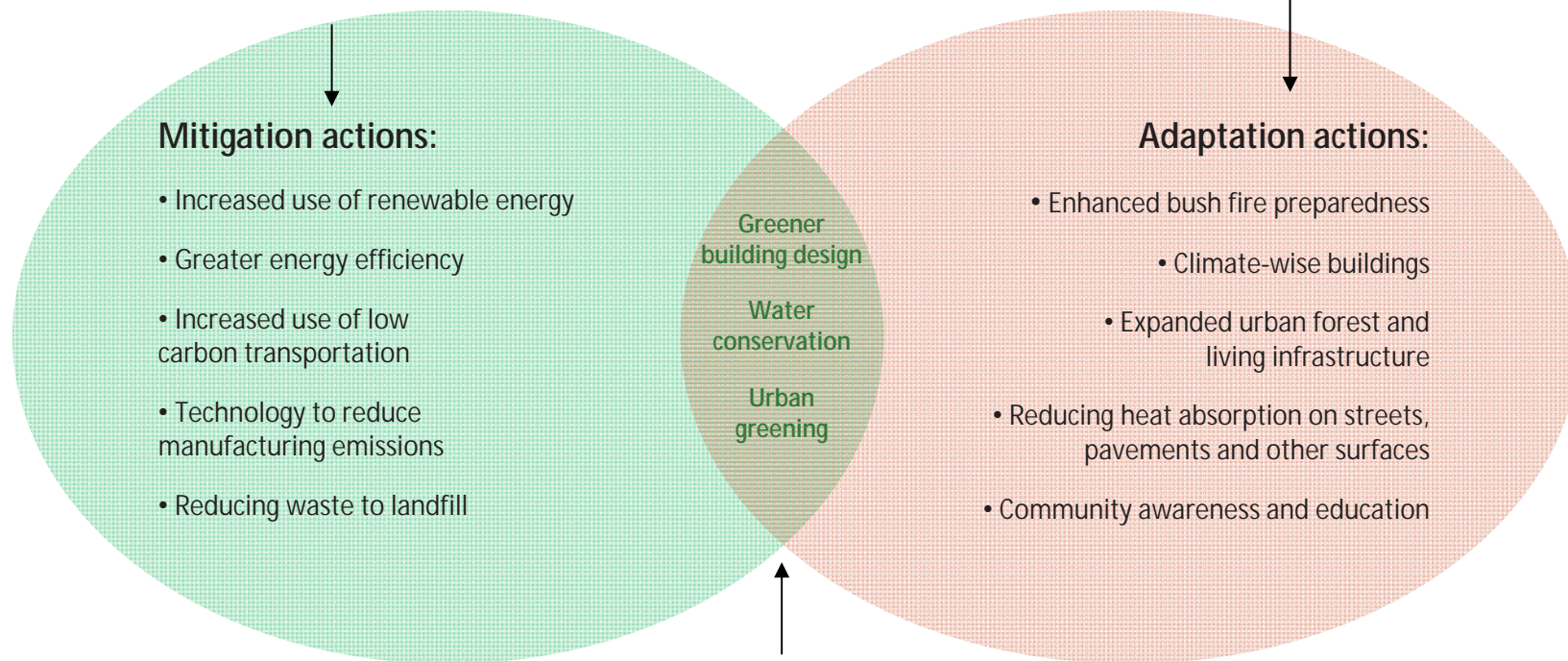
Complementarity of adaptation and mitigation actions

Mitigation

Climate change mitigation means reducing or avoiding greenhouse gas emissions to minimise the rate and magnitude of climate change.

Adaptation

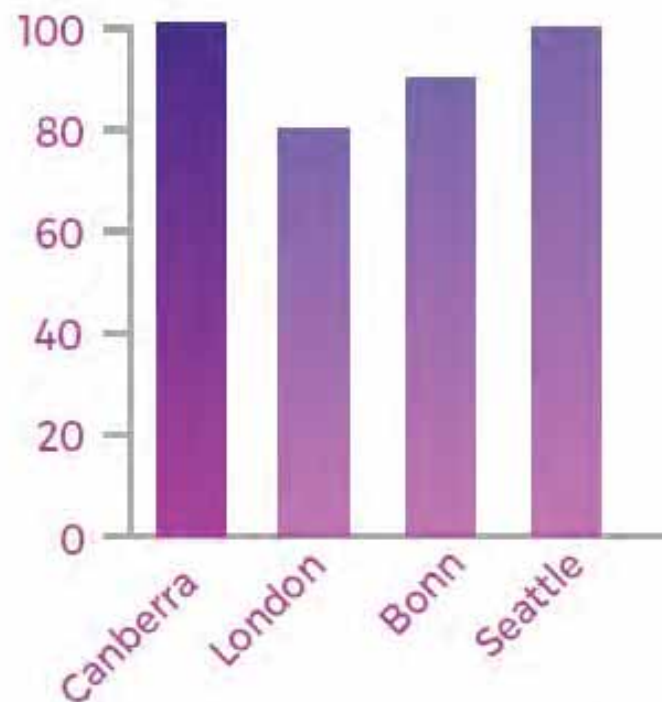
Climate change adaptation means taking steps to prepare for and respond to the effects of the changing climate.



Some actions can help adapt and mitigate

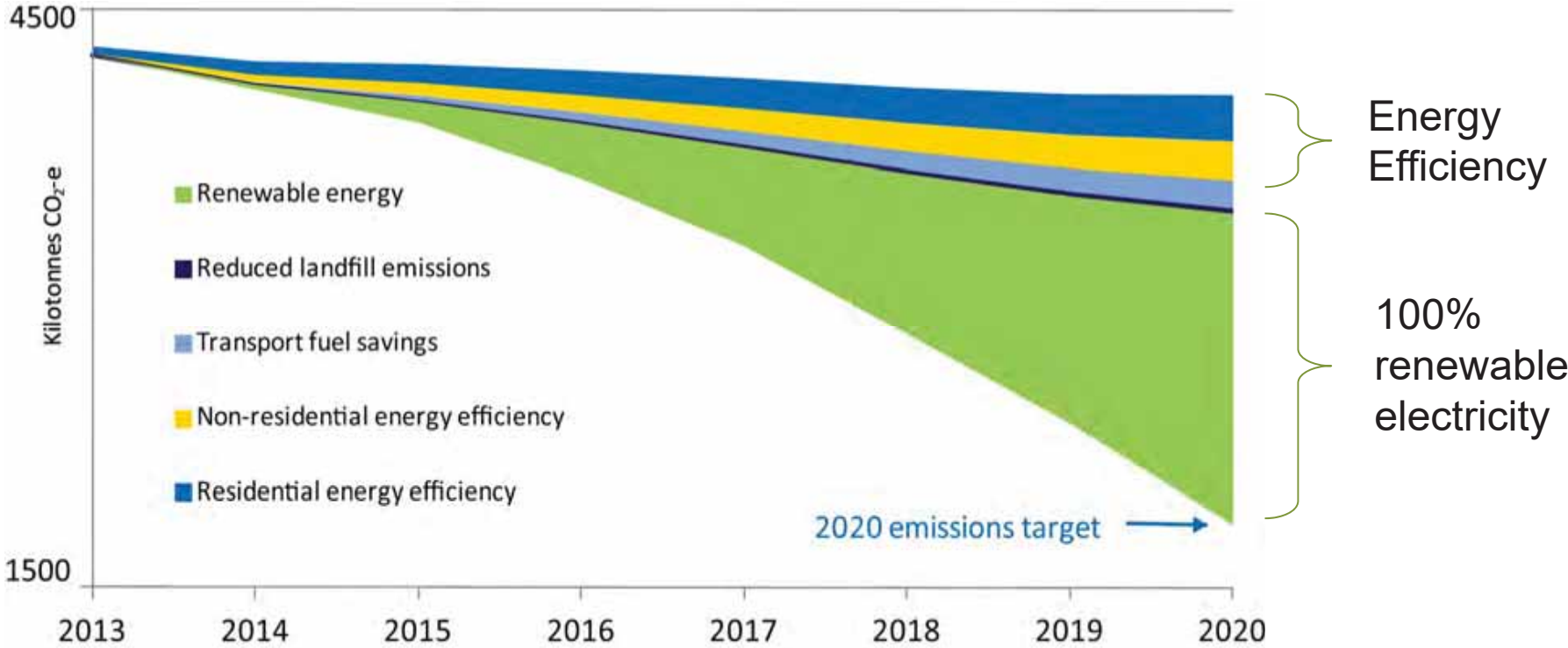
World-leading leading climate change targets

- **100%** renewable electricity by 2020 **locked in**.
- 40% reduction in greenhouse gas emissions on 1990 levels
- Zero net emissions by 2050 **at the latest**
- Firm interim targets to 2050

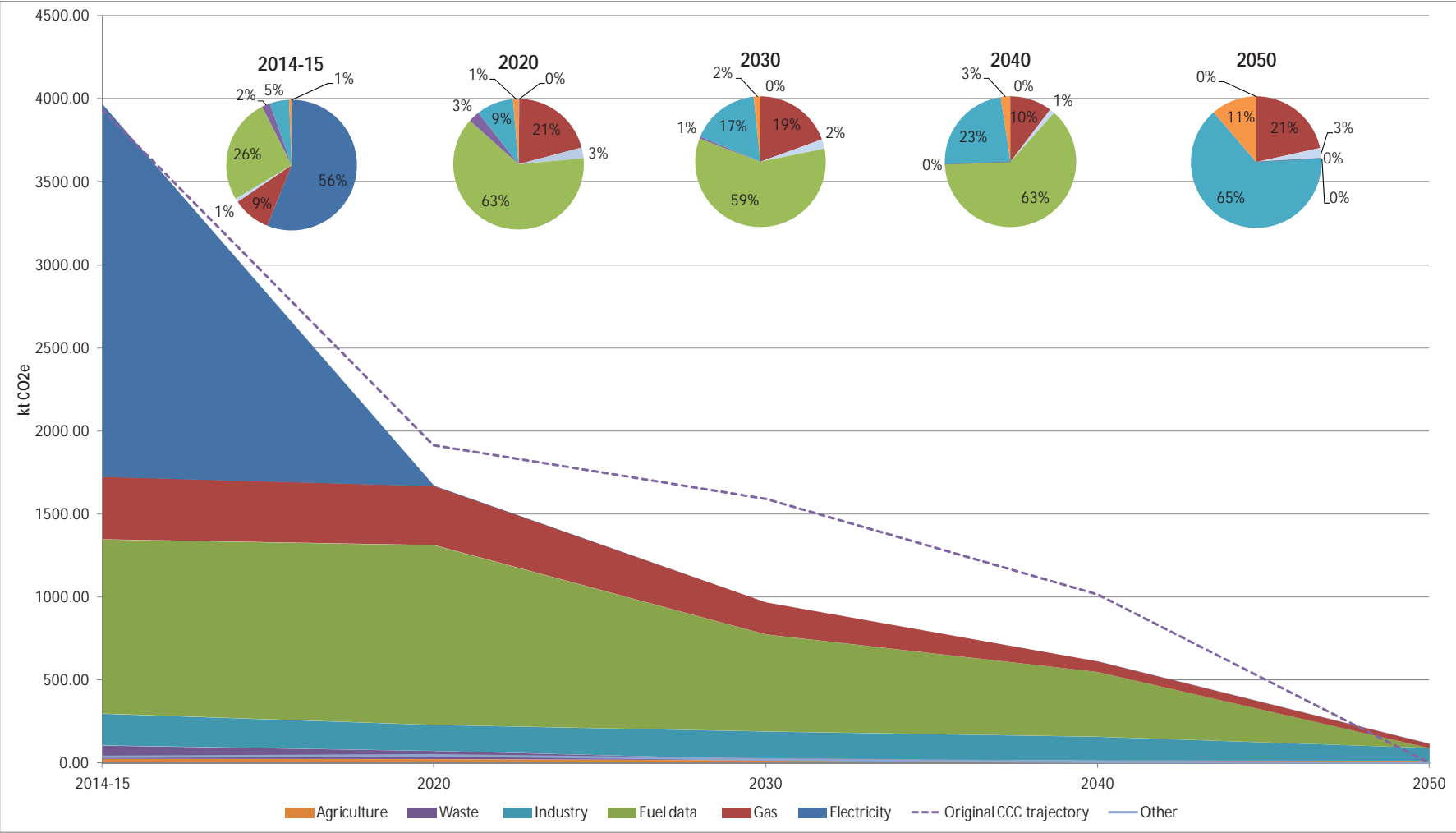


Canberra's **2050 zero net emissions target compares well against the world's climate change leaders**

Pathway to our 2020 target



Net zero emissions by 2050 (latest) with firm interim targets



Energy

1. Dramatically improve energy efficiency as first priority.
2. Lock in 100% renewable electricity by 2020 as second priority.
3. Electrify remaining energy uses (heating/cooling, hot water, cooking, transport).
4. Energy storage.

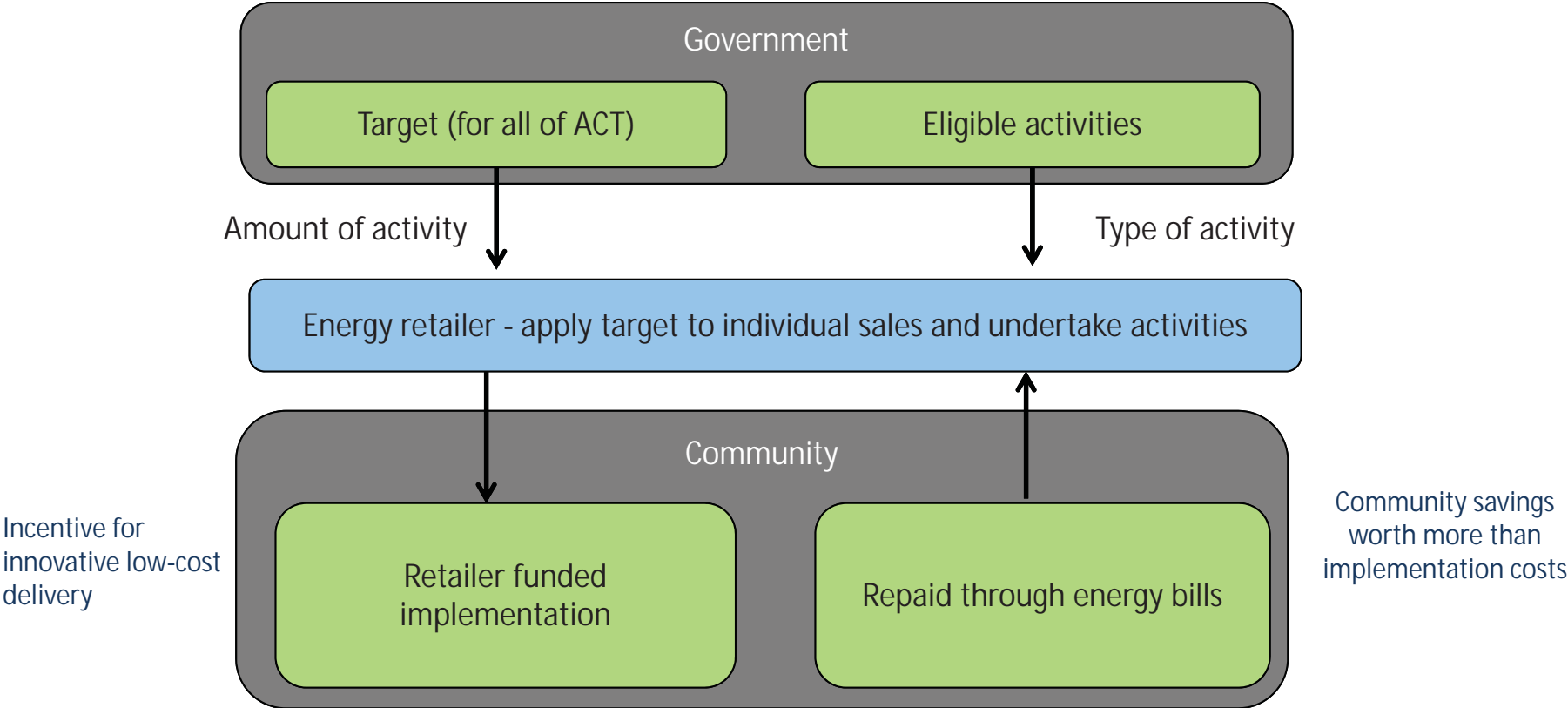


Energy efficiency

- Established under the *Energy Efficiency (Cost of Living) Improvement Act 2012*.
- Places a requirement on electricity retailers to undertake activities to achieve an energy savings target:
 - measured in CO₂-e
 - also a priority household sub-target (20%)
 - smaller 'Tier 2' Retailers can pay a contribution fee in place of undertaking activities.



EEIS – how it works



Energy Efficiency - Achievements

- ✓ Energy savings in over 75,000 Canberra households.
- ✓ Over 19,000 of these were priority households.
- ✓ Over 1 million energy savings items installed.
- ✓ 674,000 tCO₂-e saved.
- ✓ Savings of around \$3.20 p/week on average across all ACT households in 2020 (\$5.00 p/week for participating households).
- ✓ Extension to 2020, harmonisation, broaden participation and expand eligible activities.
- ✓ Over 50 Canberra suburbs have participation rates above 30%.
- ✓ 50 fulltime staff and contractors have been employed.



Buildings and the Built Environment Sector

- Transforming building sector to zero carbon high performance including transitioning from gas
- Setting trajectory for building performance
- Reviewing application of national building and appliance standards to new and existing ACT buildings and building services
- Review of the mandatory energy efficiency disclosure scheme
- Upgrade and incentive programs, including ACTSmart and the Energy Efficiency Improvement Scheme for energy retailers
- Labor/Greens Agreement (9th Assembly).

Parliamentary Agreement for the 9th Legislative Assembly for the Australian Capital Territory

By Charlotte Harper - 30 October 2016 0



100% renewable electricity by 2020



Royalla Solar Farm
Australian Capital Territory
environment.act.gov.au



4 solar farms in ACT
Royalla Solar Farm – 20 MW
Mugga Lane Solar Farm – 13 MW
Majura Road Solar Farm – 2.3 MW
Williamsdale Solar Farm – 7 MW

Coonooer Bridge project – 19.4MW

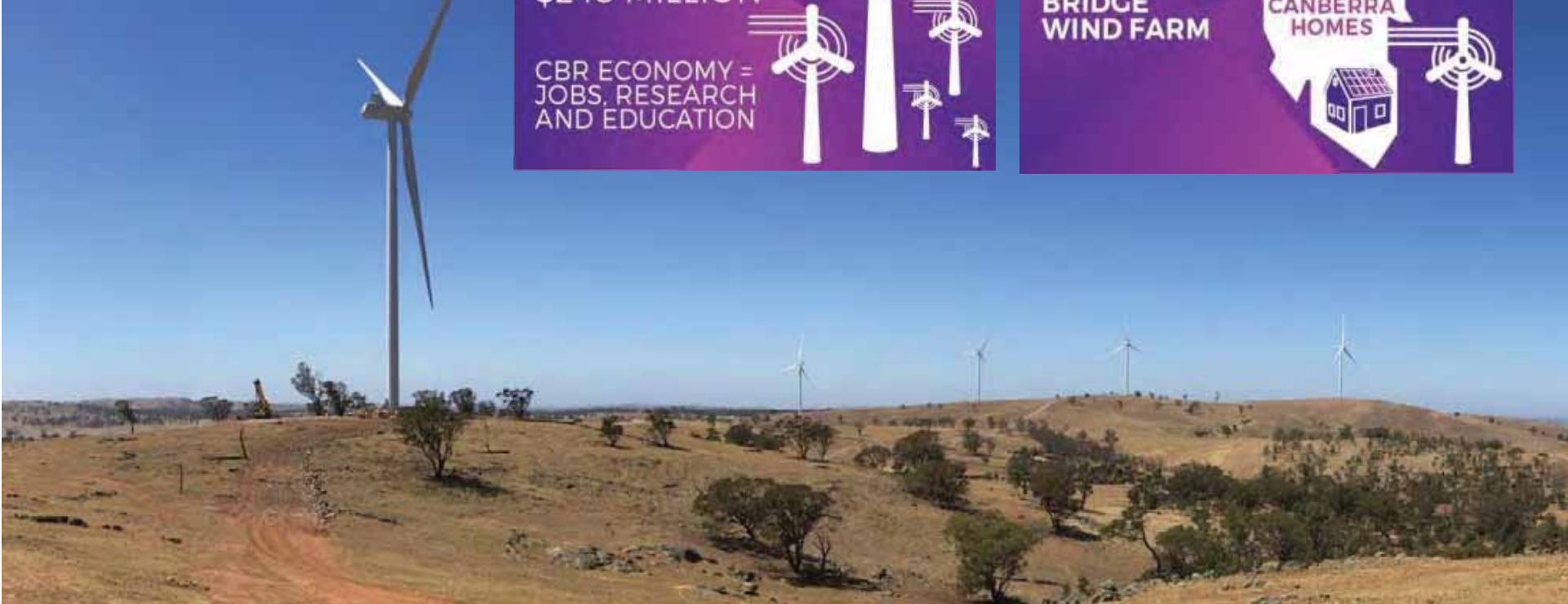
**COONOOER
BRIDGE
WIND FARM**
INVESTING
\$240 MILLION

CBR ECONOMY =
JOBS, RESEARCH
AND EDUCATION

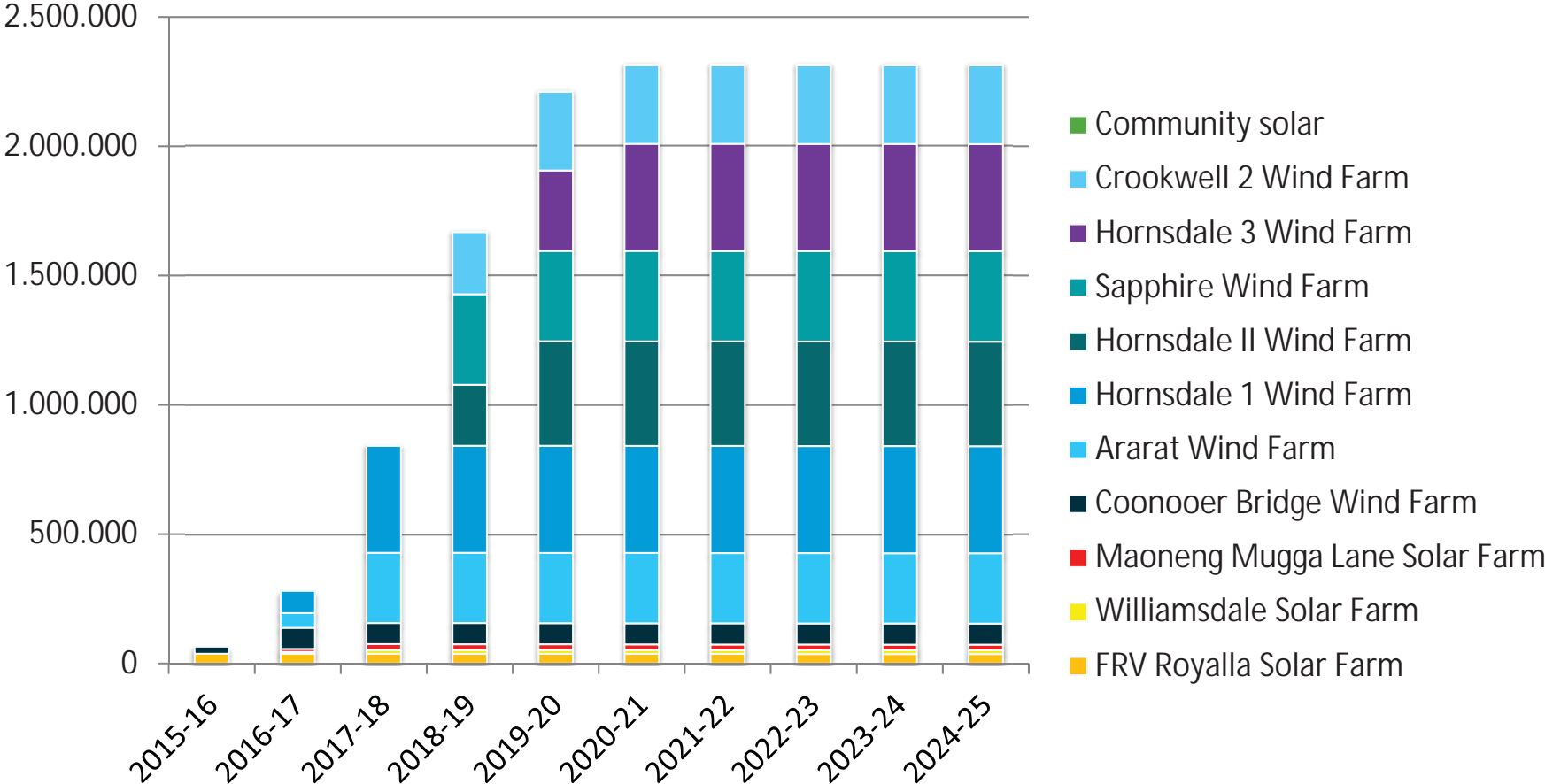


ACT GOVERNMENT
NOW SOURCING
SUSTAINABLE,
CLEAN ENERGY
FROM
**COONOOER
BRIDGE
WIND FARM**

POWER
FOR 11,300
CANBERRA
HOMES



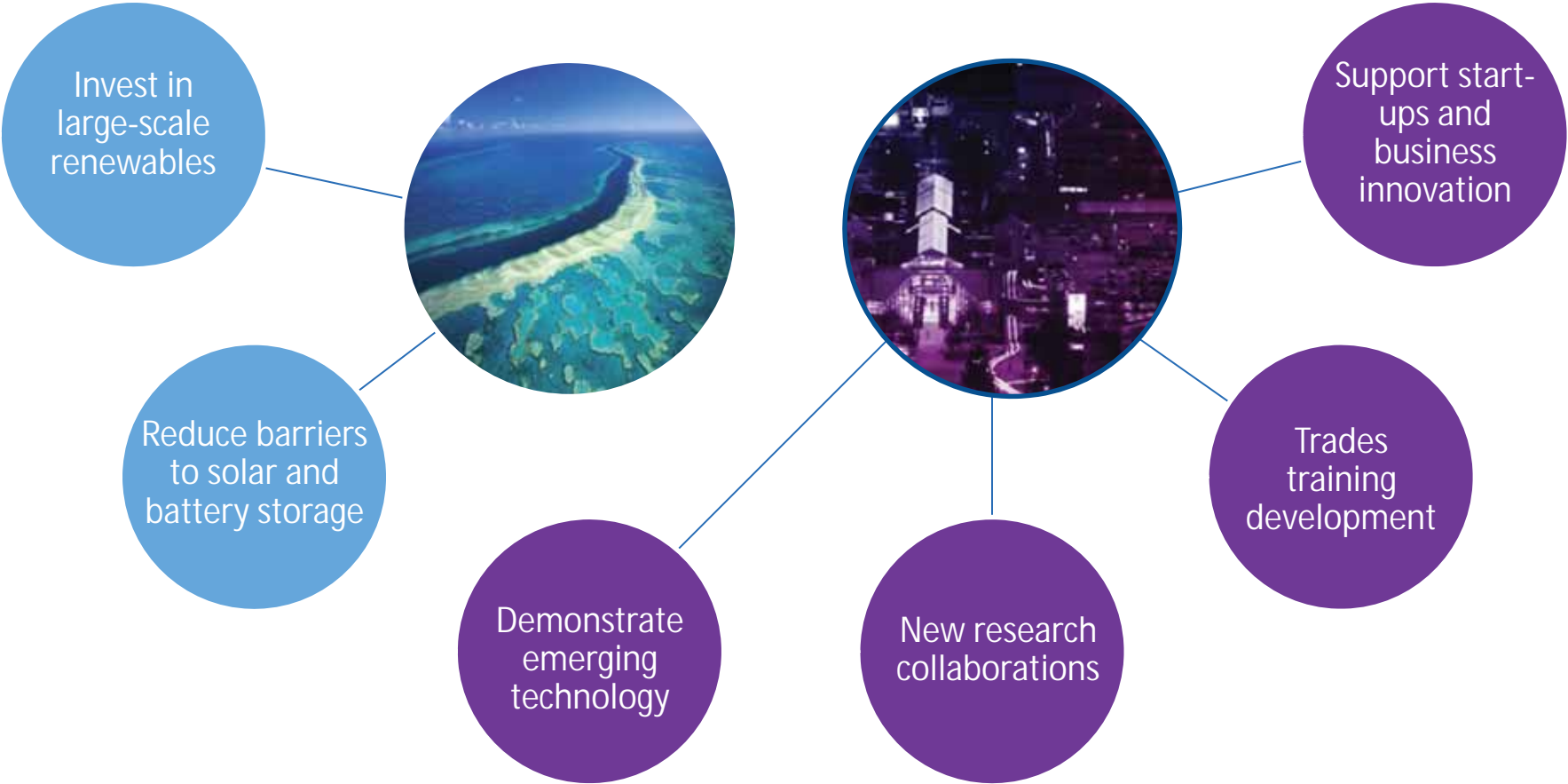
Expected renewables build-up by project (MWh)



Renewable energy policy objectives

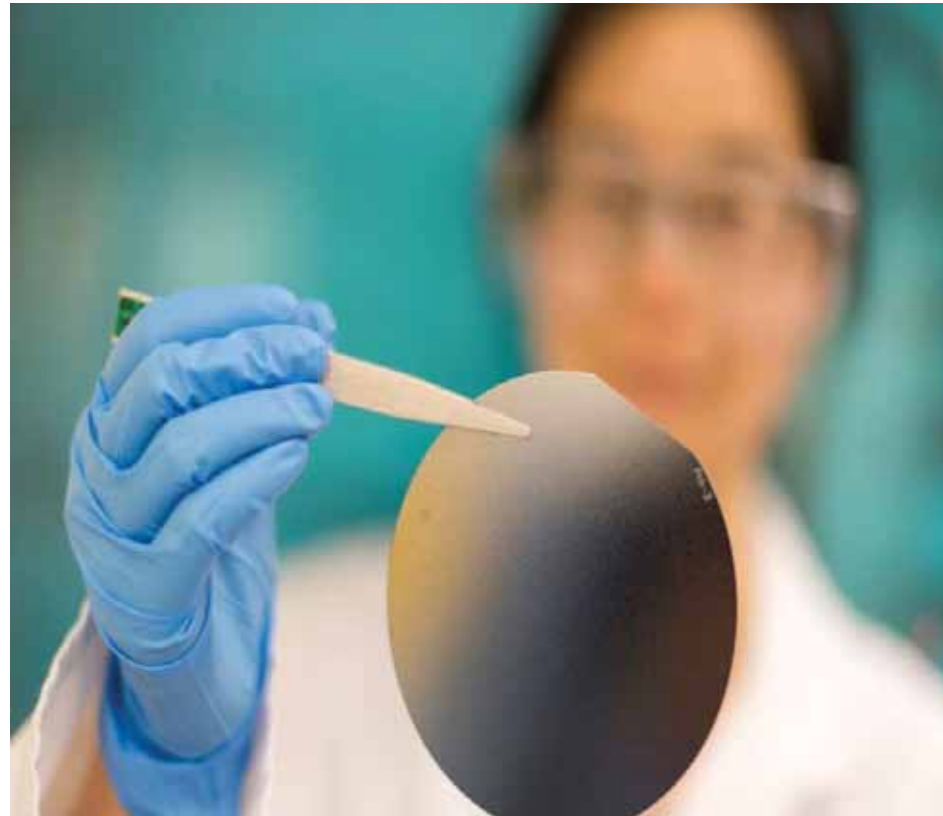
Reduce greenhouse gas emissions

CBR as a national energy innovation hub



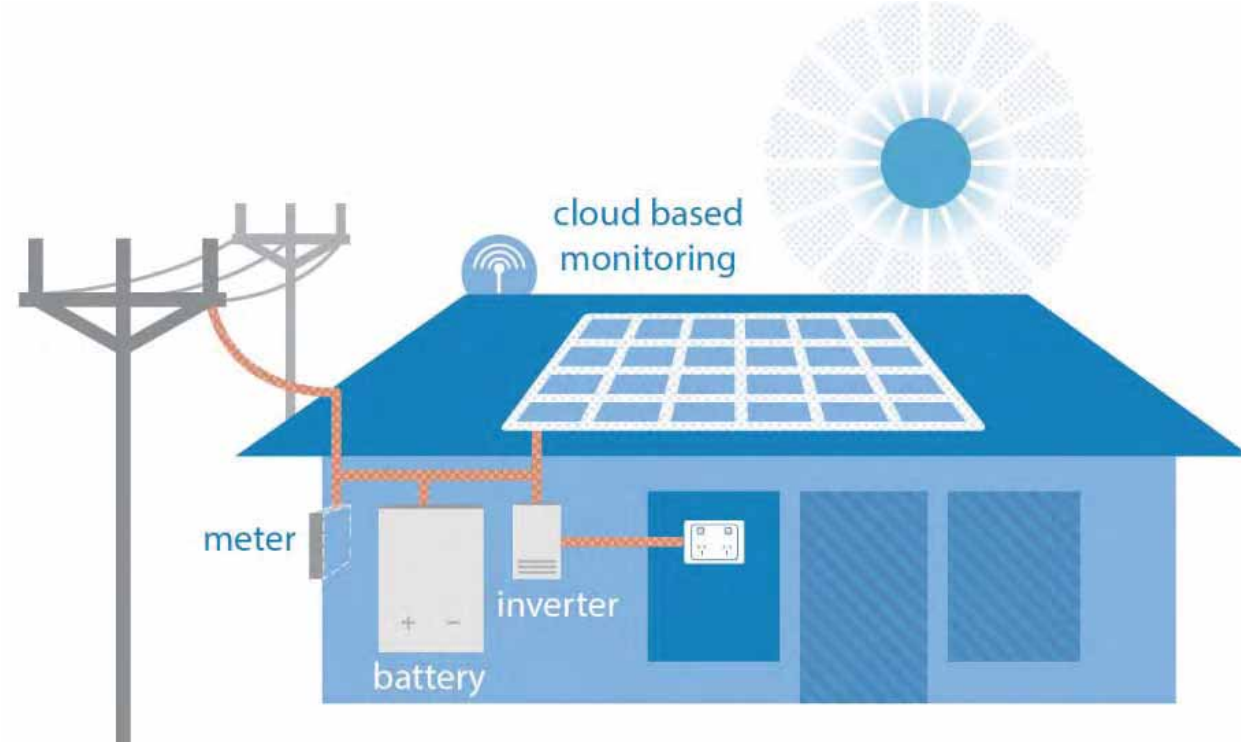
An economic and an environmental story: over \$500 million in local economic benefits

- Four national and international company HQs.
- Trades training and use of local contractors.
- Tertiary research and education.
- New technology demonstration:
 - solar battery storage
 - hydrogen.



Battery storage

200 homes 2016
600 homes 2017
5,000 homes and businesses 2020



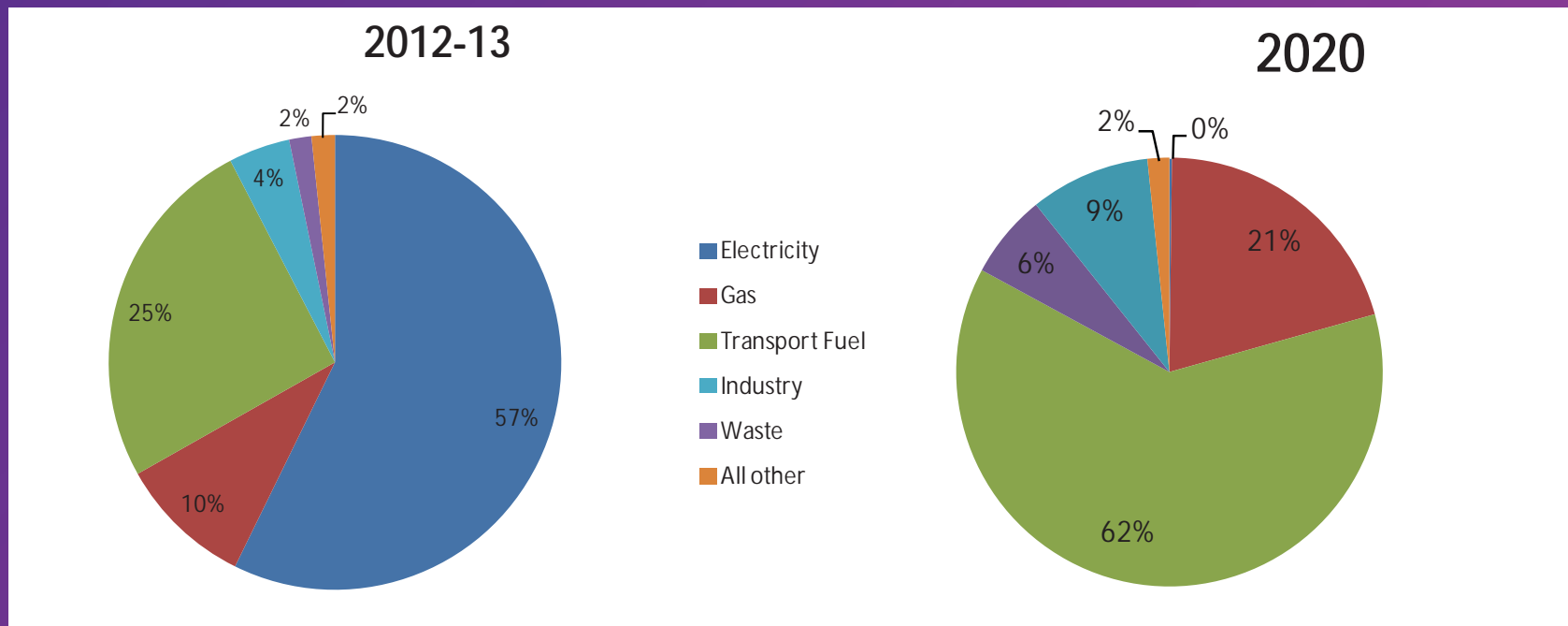
Next Gen energy storage grants

\$25 million in funding:

- 5000+ homes
- 36MW
- competitive grants
- focus on 'peak output'
- industry development
- data capture for R&D.



100% renewable electricity by 2020 shifts focus to transport, buildings, gas and waste



Buildings powered by 100% renewable electricity



Light rail powered by 100% renewable electricity



Buses powered by 100% renewable electricity



EV's powered by 100% renewable electricity



Hydrogen

Production of hydrogen from 100% renewable electricity
20 hydrogen-powered cars 2018
\$180 million hydrogen investment
Refuelling & servicing infrastructure
Research and development
Electricity grid support
Reducing network emissions

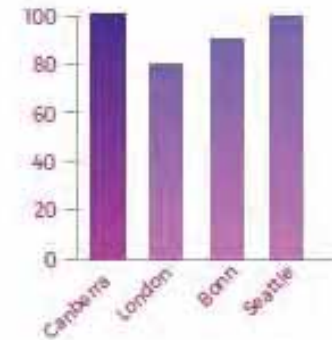




Canberra is the renewable energy capital of Australia



Canberra is on track to be powered by 100% renewable energy by 2020



Canberra's 2050 zero net emissions target compares well against the world's climate change leaders