Renewable Energy in the ACT

for the

Energy Update

ANU Energy Change Institute

8 December 2015
Vision for the Territory

ACT as an export-oriented hub for renewable energy innovation & investment
The Climate Change and Greenhouse Gas Reduction Act 2010 mandates:

- **40%** below 1990 emission levels by **2020**
- **80%** below 1990 emissions levels by **2050**
- **100%** carbon neutral by 2060
- Peaking per capita emissions by 2013
- **90%** renewable electricity supply by **2020**

**Most ambitious targets in Australia**

**Mitigation**  **Adaptation**  **Renewables**  **Reduced energy consumption**
## GHG Emissions Targets – National

<table>
<thead>
<tr>
<th>ACT</th>
<th>Greenhouse Gas Reduction Target</th>
<th>Renewable Energy Target</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td><strong>IPCC: 40% reduction on 1990 levels by 2020</strong></td>
<td>33,000 GWh in 2020 – 23.5% of electricity generation in 2020</td>
</tr>
<tr>
<td>National</td>
<td>5% below 2000 levels by 2020 26-28% below 2005 levels by 2030</td>
<td>90% renewable energy by 2020, 100% by 2025</td>
</tr>
<tr>
<td>ACT</td>
<td>40% below 1990 levels by 2020 80% by 2050 100% by 2060</td>
<td></td>
</tr>
<tr>
<td>Tas</td>
<td>35% below 1990 levels by 2020</td>
<td>100% renewable energy by 2020</td>
</tr>
<tr>
<td>SA</td>
<td>40% below 1990 levels by 2050</td>
<td>50% of electricity by 2020</td>
</tr>
<tr>
<td>NSW</td>
<td>No target</td>
<td>20% renewable energy by 2020</td>
</tr>
<tr>
<td>Qld</td>
<td>No target</td>
<td>50% of electricity by 2030</td>
</tr>
<tr>
<td>Vic</td>
<td>No target</td>
<td>At least 20% by 2020</td>
</tr>
<tr>
<td>WA</td>
<td>No target</td>
<td>No target</td>
</tr>
<tr>
<td>NT</td>
<td>No target</td>
<td>No target</td>
</tr>
<tr>
<td>State/Regional Government</td>
<td>Country</td>
<td>Percent Reduction</td>
</tr>
<tr>
<td>--------------------------</td>
<td>-----------</td>
<td>------------------</td>
</tr>
<tr>
<td>Australian Capital Territory</td>
<td>Australia</td>
<td>100</td>
</tr>
<tr>
<td>Baden-Württemberg</td>
<td>Germany</td>
<td>90</td>
</tr>
<tr>
<td>Fukushima Prefecture</td>
<td>Japan</td>
<td>80</td>
</tr>
<tr>
<td>Basque Country</td>
<td></td>
<td></td>
</tr>
<tr>
<td>British Columbia</td>
<td></td>
<td></td>
</tr>
<tr>
<td>California</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Connecticut</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Gifu Prefecture</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Kyoto Prefecture</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Massachusetts</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Minnesota</td>
<td></td>
<td></td>
</tr>
<tr>
<td>New York</td>
<td></td>
<td></td>
</tr>
<tr>
<td>North Rhine-Westphalia</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ontario</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Scotland</td>
<td>UK</td>
<td>100</td>
</tr>
<tr>
<td>Tasmania</td>
<td>Australia</td>
<td>100</td>
</tr>
<tr>
<td>Australian Capital Territory</td>
<td>Australia</td>
<td>100</td>
</tr>
<tr>
<td>La Réunion</td>
<td>France</td>
<td>100</td>
</tr>
<tr>
<td>Upper Austria</td>
<td>Austria</td>
<td>100</td>
</tr>
<tr>
<td>Hawaii</td>
<td>US</td>
<td>100</td>
</tr>
</tbody>
</table>

Source: The Climate Group States & Regions, CDP, carbonn Climate Registry (via NAZCA), Under 2 MOU
Why the ACT?

• High incomes – *Highest household income & wealth in Australia* (ABS, 2013)

• Highly educated – *Highest proportion of 15+ yo population with Bachelors degree or higher in Australia* (ABS, 2013)

• Progressive & supportive population – *80% population highly supportive of climate action* (ACT survey, 2013)

• High penetration of rooftop solar

• Highly supportive policy framework & political leadership

• **Australian National University** – *QS World Ranking #19*
Renewables Investment Program ... to date


- 20 MW Solar Auction (Fast Track)
- 200 MW Wind Auction
- 1 MW Community Solar
- 20 MW Solar Auction (Regular Stream)
- 200 MW Wind Auction
- 50 MW Next Gen Solar
- 200 MW Wind Auction II

More wind, solar, biomass?

Driving over $1.5 billion in infrastructure development

60% Renewable
90% Renewable
100% Renewable
Local Benefits from Renewable Auctions

- $300 million in local investment
- Relocation of Asia-Pacific HQ
- Creation of two new global operations centres in Canberra
- New $1.2 million Renewable Energy Innovation Fund (REIF)
- $5.9 million to create Renewable Energy Skills Centre of Excellence at Canberra Institute of Technology (CIT)
- Significant use of ACT-based consultants during development
- New ANU Master’s unit in Wind Development
ACT Renewable Energy Industry Development Strategy

ACT Government

Renewable Energy Innovation Fund (REIF)

Solar/Wind Auctions

SERREE network

Research, Education & Training Institutes

New/Emerging Ventures

Attracting/growing Renewable Energy Companies to/in the ACT

Venture Support

CBRIN  ICon  GRIFFIN  KILN  ANU CV  ARENA

Investors

Angels  VCs  Institutional
REIDS Inaugural Partners

[Logos of various partners, including ActewAGL, ACT Government, ANU Connect Ventures, Australian National University, CBR Innovation Network, ACT Government, Canberra Institute of Technology, Downer, INVEST Canberra, GE, IT Power, Megawatt Capital, REIDS, Siemens, Vestas, windlab, Zhenfa, and others]
Building the green economy

ACT Renewables Auctions

- Attract Co’s to the ACT
- Expand opportunities of Co’s in ACT
- New ventures
- RE Innovation Precinct
- New research
- New trades training
- RE Innovation Fund (REIF)
- Clean power @ record low prices
Emerging issues – transport emissions

2012-13
- Electricity: 59%
- Transport: 25%
- Natural gas: 9%
- Synthetic gases: 3%
- Waste: 3%
- All other sources: 1%

2019-20 (projection)
- Transport: 54%
- Electricity: 18%
- Natural gas: 14%
- Synthetic gases: 8%
- Waste: 5%
- All other sources: 1%
Take Home Messages

• ACT is a national/international leader in renewables

• Our leadership is delivering results across the triple bottom line in the ACT

• Collaboration and innovation is key to our continued success

• Further leverage investment and action to our advantage
Thank you

Lachlan James

lachlan.james@act.gov.au