RENEWABLE ENERGY: STATE LEADERSHIP NEEDED TO FIX FEDERAL FAILURES

In the 2000s, Victoria emerged as a national leader in renewable energy. The combination of a rich wind resource, manufacturing capacity, and, most importantly, supportive state government policies propelled Victoria to the front of the pack on installed (non-hydro) renewable energy capacity.

The Victorian Renewable Energy Target implemented by the Bracks government in 2006 was the key driver expanding wind energy generation. The state government’s decision to power the Wonthaggi desalination plant with renewable energy saw the construction of the Macarthur wind farm—the largest in the southern hemisphere.

Nationally, the renewable energy sector hit tough times with the election of the Abbott government in September 2013. In February 2014, the Federal government announced a review of the Renewable Energy Target. The resulting uncertainty resulted in a 90 per cent decrease in investment in Australia’s renewable energy sector and over 2,500 job losses. In mid-2015 the Abbott government cut the national RET by 20 per cent (from 41,000GWh to 33,000GWh).

Sub-national governments played a key role to help the renewable energy sector withstand the uncertainty at the national level. South Australia’s aspirational Renewable Energy Target helped the state secure investment. Streamlined planning processes and advocacy from Renewables SA helped meet the state’s deployment goals. In September 2014, South Australia lifted its Renewable Energy Target to 50 per cent by 2025.

The Australian Capital Territory’s Renewable Energy Target is the most notable example of leadership among the Australian states. The ACT used reverse auctions to drive the rollout of renewable energy needed to meet the territory’s target. The scheme has seen the construction of utility-scale renewable energy projects, including two wind farms in Victoria (Ararat and Coonooer Bridge).

Since 2010, Friends of the Earth have advocated for policies to accelerate the rollout of renewable energy. This includes advocacy to remove barriers to wind farm development, as well as the establishment of a Victorian Renewable Energy Target. Growing renewable energy in Victoria will help create jobs, stimulate investment in a new sector, and reshape the energy mix to address climate change.

A broad coalition of business, community, and environmental organisations has formed in support of growing renewable energy in Victoria. Friends of the Earth, the Victorian Employers’ Chamber of Commerce and Industry, Clean Energy Council, and wind energy developers welcomed the Andrews government’s Renewable Energy Roadmap with its commitment to Victorian Renewable Energy Targets for 2020 and 2025.

Friends of the Earth, the Victorian Trades Hall Council, Melbourne City Council, and Municipal Association of Victoria, among others, have called for the government to lift its renewable energy ambition above the baseline commitment of at least 20 per cent by 2020.

This report outlines the need for respectable Victorian Renewable Energy Targets, identifies international and domestic benchmarks for targets, and sets out a range of additional policies to help Victoria hit its targets and get the most benefit out of growing renewables.
VICTORIA’S RENEWABLE ENERGY TARGETS: HOW AMBITIOUS CAN THEY BE?

Friends of the Earth strongly endorse the state government’s commitment to Victorian Renewable Energy Targets for 2020 and 2025.

Victorian Renewable Energy Targets are the keystone of the state government’s plan. The targets provide an incentive for the government to meet the policy objectives; transparency and accountability mechanisms for the community; and confidence for investors.

The Victorian government’s Renewable Energy Roadmap notes renewable energy doubled from 6 percent in 2009 to 12 percent in 2014. Currently, nearly 14 percent of Victoria’s electricity demand is met by renewable energy sources (including hydro).*

Friends of the Earth recommend the state government adopt respectable Victorian Renewable Energy Targets—targets that are both ambitious and achievable.

**TARGETS FOR 2020**

Friends of the Earth recommend the government set a respectable target of 30 percent renewable energy by 2020.

Analysis of Victorian government and Australian Energy Market Operator data shows Victoria could meet 30 percent of state electricity demand from renewable energy sources (appendix I). The government can achieve this by ensuring Victoria tracks to a high projection of distributed solar and the construction of 16 wind farms (with an allowance to amend existing planning permits to use 3MW turbines).

**TABLE: VICTORIA’S RENEWABLE ENERGY PROFILE 2020**

<table>
<thead>
<tr>
<th>Victorian Renewable Energy</th>
<th>MW</th>
<th>GWh</th>
</tr>
</thead>
<tbody>
<tr>
<td>Distributed Solar</td>
<td>2469</td>
<td></td>
</tr>
<tr>
<td>Existing Wind</td>
<td>1229</td>
<td>3321</td>
</tr>
<tr>
<td>New Wind</td>
<td>3107</td>
<td>8398</td>
</tr>
<tr>
<td>Total RE</td>
<td></td>
<td>14188</td>
</tr>
</tbody>
</table>

**Percent Demand** 30%

**TARGETS FOR 2025**

Victoria’s 2020 Renewable Energy Target will put the state in a position to accelerate growth to 2025.

With comparable jurisdictions such as Scotland on track to be entirely powered by renewable energy by 2020, the Victorian government can afford to be ambitious. Indeed, the ACT is has adopted a target of 100 percent renewable energy by 2025.

Friends of the Earth would welcome a commitment of at least 50 percent renewable energy by 2025. A target of this level of ambition will put Australia on a trajectory to reach a national renewable energy goal of 50 percent by 2030—the policy of the alternative federal government.

RENEWABLE ENERGY TARGETS: THE INTERNATIONAL EXPERIENCE

As of mid-2015, there are 164 jurisdictions (national and sub-national) with renewable energy targets.¹ Half of the states in the USA have targets.

Comparable jurisdictions to Victoria, that is, with a similar population, offer guidance for what can be considered respectable Renewable Energy Targets. The US state of Colorado has a target of 30 per cent by 2020 whereas Scotland has a more ambitious target of 100 percent by 2020. New Zealand, population of 4.9 million, is heading towards 90 percent by 2025.

Victoria can also look to leading industrial economies for guidance on state Renewable Energy Targets. California, the world’s eighth largest economy (with a population of 38 million), has a target of 33 percent by 2020, and 50 percent by 2030. Germany has set targets of 35 percent by 2020 and 45 percent by 2030.

HOW VICTORIA MEASURES UP INTERNATIONALLY

¹ The Victorian government’s baseline commitment.
South Australia’s Renewable Energy Target helped the state secure investment. Streamlined planning processes and advocacy from independent government agency Renewables SA has helped meet the state’s deployment goals. In September 2014, South Australia lifted its Renewable Energy Target to 50 per cent by 2025.

The Australian Capital Territory’s Renewable Energy Target is the most notable example of leadership among the Australian states. The ACT used reverse auctions to drive the rollout of renewable energy needed to meet the territory’s target. The scheme has seen the construction of utility-scale renewable energy projects, including two wind farms in Victoria (Ararat and Coonooer Bridge).

Queensland has set a Renewable Energy Target of 50 percent by 2030. According to The Courier Mail, the target has lured solar and wind farm projects to the Sunshine state. The 17 proposed projects in Queensland are capable of powering one million homes and creating 2,300 jobs in regional areas.

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### HOW VICTORIA MEASURES UP NATIONALLY

**SOUTH AUSTRALIA**
50% BY 2025

**QUEENSLAND**
50% BY 2030

**ACT**
90% BY 2020
100% BY 2025

**VICTORIA**
20% BY 2020*

* The Victorian government’s baseline commitment.
The national Renewable Energy Target was originally designed to deliver 41 gigawatt-hours of electricity from new renewable energy sources (existing hydro is not included in the target). Due to the Federal government cutting the target by around 20 percent, Australia is now aiming to generate 33,000 gigawatt-hours of electricity from new renewable energy sources (excluding hydro).

A business-as-usual scenario would see Victoria produce 7.2 TWh (terawatt hours) of the renewable energy generation needed to meet the national Renewable Energy Target. By adopting a Victorian Renewable Energy Target of 30 percent, the Andrews government can boost the state’s share of national renewable energy generation to 12.9 TWh. (NOTE: The BAU scenario assumes an equal spread of renewable energy investment nationally, based on currently proposed projects listed by AEMO).

**SCENARIO 1: COMPLIMENTARY VRET**

A Victorian Renewable Energy Target of 30 percent by 2020 from the Andrews government that is complimentary to the national scheme would change the geographic distribution of projects. Under this policy setting, developers would be able to use Renewable Energy Certificates from the national RET scheme as well as Victorian-based incentives to complete projects. This setting does not fill the breach created by Federal government cuts, but acts to maximise Victoria’s share of investment and jobs. The upside of the ‘complimentary VRET’ scenario is that it can restore investor confidence and rekindle the development needed to stave off so-called penalty prices that will be triggered.

**SCENARIO 2: BAU + ADDITIONAL VRET**

Another scenario would see the Victorian government establish incentives to expand on the renewable energy development that would occur under a business-as-usual scenario. Under these settings, the state government could apply the ACT model of reverse auctions to build the renewable energy generation capacity required to hit a Victorian target of 30 percent by 2020. This scenario would fill the breach of Federal government cuts to the national target, edging renewable energy generation to 39,000 gigawatt hours by the end of the decade.

**SCENARIO 3: ADDITIONAL VRET**

The Victorian government may apply the ACT model of Renewable Energy Target to the state. A Victorian Renewable Energy Target of 30 percent by 2020 that is entirely additional to the national scheme would retire the Renewable Energy Certificates. This scenario would boost national renewable energy generation to over 45,000 gigawatt-hours by 2020 and deliver the greatest benefit to industry and environment.
These jobs range from the manufacture of cables, transformers, turbines towers, frames for large-scale solar installations, logistics and transport; construction and contracting work (i.e. fencing and concrete); and, operations and maintenance.

Modelling conducted by Sinclair Knight Merz for the Clean Energy Council finds the typical 50MW wind farm creates 48 construction jobs and employs five staff for operations and maintenance (for the 25-30 year life of the project). There are 3,107 MW of wind farms already approved or expected-to-be approved in Victoria. Extrapolating from SKM’s figures, building the committed wind farms would create over 2,500 construction jobs and nearly 300 full-time operations and maintenance jobs for the 25- to 30-year life of the projects.

Respectable Victorian Renewable Energy Targets will create jobs across the state.

CASE STUDY:
MORE RENEWABLES = MORE JOBS

Building wind farms and rolling out rooftop solar create good jobs for construction workers and electricians. The sector also creates manufacturing jobs in Portland where Keppel Prince makes wind turbine towers, Glen Waverly where Wilsons build transformers, and in Tottenham where Olex manufacture cables that connect projects to the grid.
POLICIES TO DRIVE RENEWABLE ENERGY GROWTH

REVERSE AUCTIONS FOR RENEWABLE ENERGY

The Australian Capital Territory's model to grow renewable energy is proven and is achieving its stated objectives. Friends of the Earth support the concept of reverse auctions and Contracts for Difference (CfD) to build new renewable energy capacity in Victoria. This mechanism is economically efficient; avoids duplication with national policy; and can adapt to potential national policy changes (i.e: the reintroduction of carbon pricing and/or increased national RET).

Undertaking Contracts for Difference to grow renewable energy and create jobs in Victoria will come at an acceptable price to the state government and community.

ENCOURAGE FOSSIL FUEL GENERATORS TO EXIT THE MARKET

Friends of the Earth fully support government plans to expand Victoria’s renewable energy sector, yet we are mindful of the fact that without mechanisms to close current coal production there is very limited space in the market for new energy.

It is essential that the government develops a transition plan to prepare coal communities for the future, and take steps to reduce excess coal power capacity. This is now the priority for state energy policy. The issues can be addressed in both the Renewable Energy Action Plan and an upgraded Climate Change Act.

As one measure that could be implemented in the short term is for the government increase the levy on brown coal generation (present brown coal royalty is approximately $1/MWh) to:

- Raise revenue to meet shortfalls in the cost of decommissioning coal plants and rehabilitating mines.
- Raise revenue to fund Contracts for Difference for renewable energy generation to meet respectable Victorian Renewable Energy Targets.
- Fund other measures to manage the impact of power prices on vulnerable groups in the community.
- Increase the marginal cost of brown coal generation and increase the likelihood of market forces closing generators.

CASE STUDY:
HEPBURN WIND FARM - COMMUNITY CONTROL OVER OUR ENERGY FUTURE

In June 2011, Australia’s first community-owned wind farm started generating power. The Hepburn Wind cooperative is the owner and operator of the 4.1MW wind farm at Leonards Hill, about 100km northwest of Melbourne. The two turbines, called Gale and Gusto, produce enough clean energy for over 2000 homes – equivalent to all the homes in Daylesford and Hepburn Springs region.
ADDITIONAL POLICY MEASURES TO MEET RENEWABLE ENERGY TARGETS:

A Victorian Renewable Energy Target ensures transparency and accountability for the public, and sends a clear signal to investors. The task of meeting Victorian Renewable Energy targets can be made easier with a suite of additional policy measures.

RENEWABLE ENERGY ADVOCATE

An independent Renewable Energy Advocate can track Victoria’s annual progress towards meeting Renewable Energy Targets. The advocate would make recommendations to the government for increasing the state’s competitiveness to secure renewable energy investment. It would make recommendations to government for the most effective ways to accelerate renewable energy deployment and transition away from polluting fossil fuels.

ENCOURAGE JOB CREATION AND INVESTMENT IN AUSTRALIA WITH MANDATORY DISCLOSURE OF LOCAL CONTENT

The state government can maximise local economic benefits by requiring large-scale renewable energy developers (projects greater than 1MW) to disclose the local content used in projects. An estimation of local content could be made available to the community during the planning and community engagement phases. Local content disclosure will provide transparency for communities about the ways in which renewable energy projects benefit the local, state, and national economy. It is our hope that disclosure will encourage developers to increase the use of local contractors and manufacturers.

CASE STUDY:
RESPECTABLE VRETS CAN EXPAND VICTORIA’S ROLE AS A TRAINING HUB

Global wind energy leader Vestas has based its warehouse and training facility in Lyndhurst, in the outer south-eastern suburbs of Melbourne. It is home to the company’s Asia-Pacific training centre for wind turbine technicians. Equipped with a nacelle simulator (which contains the generator and gearbox, etc) and classrooms, it’s where turbine technicians hone their skills. The firm’s wind turbine specialists often train technicians from as far away as Japan.
UNDEARTAKE REGIONAL RENEWABLE ENERGY DEVELOPMENT PLANS

Energy policy and infrastructure needs to be re-imagined. The era of centralised power generation is coming to an end. Regional Renewable Energy Development Plans can encourage a shift in thinking and investment at a regional level. These opt-in plans would divide the state into geographic regions (e.g. The Latrobe Valley, Mallee, East Gippsland, etc) and encourage collaboration between groupings of local councils. The Regional R.E. Development Plans would identify:

- Available renewable energy resources (wind, solar, wave, bio energy, micro-hydro, as well as energy storage)
- Land use profile and industry analysis
- Regional electricity demand
- Municipal electricity demand
- Opportunity for renewable energy development in the region
- Ability to stimulate the construction of projects through procurement
- Access to transmission and distribution infrastructure
- An assessment of the contribution each region can make towards meeting Victorian Renewable Energy Targets for 2020 an 2025

Generating this knowledge will help local councils and investors to identify development opportunities. The regional focus could help encourage distribution throughout the state of the jobs and economic benefits of renewable energy development. This proposal will provide a useful regional focus for community engagement.

STREAMLINE VICTORIA’S PLANNING REGIME FOR WIND ENERGY

Victoria has a world-class wind resource and now has 3,107MW of approved or likely-to-be approved wind farm projects.

The state is competing against other jurisdictions for investment, so the time it takes to assess or amend a proposal in Victoria, South Australia, and New South Wales, will decide where investors put their money. Additional human resources in the Department of Planning can quicken the approvals process or the time it takes to make modifications to existing projects. An efficient planning system will attract developers to Victoria.

The government can encourage community-based wind farm development by exempting community-initiated from all ‘no-go-zones’ and the 1km ‘buffer zone’ for wind energy, providing the projects adhere to noise standards.

Government initiatives to ensure fairer revenue sharing arrangements for those living near wind farms would enhance the technology’s social license to operate (e.g. Coonooer Bridge wind farm). Initiatives to improve community engagement practices surrounding large-scale renewable energy projects are also worthy of policy.

CASE STUDY:
VICTORIA: HOME TO AUSTRALIA’S FIRST WIND TURBINE

The Cain government oversaw the installation of Australia’s first wind turbine at Breamlea on the south coast of the Bellarine Peninsula. Installed in November 1987 by the State Electricity Commission of Victoria, the 60kW turbine has generated power for over 25 years.
EMPOWER THE COMMUNITY ENERGY SECTOR

Support pre-feasibility and provide startup capital

The government can assist community-owned renewable energy projects by providing grants for prefeasibility studies and low-interest loans as start-up capital. Modelling by Marsden Jacob Associates shows every dollar of public money invested in community-owned renewable energy projects leverages $17 from the community.\textsuperscript{xiii}

Establish a Solar Rooftop Register to drive community projects

The government can enable community-solar projects barrier to community energy by developing an online database of willing hosts. The project would engage the public and commercial sector to identify sites for community solar projects (e.g. Bank buildings, post offices, libraries, grocery stores). Nongovernment organisations are ideally positioned to develop this online tool.

Reform the formula for rate payments

Community-owned energy projects can be made more viable by establishing a specific formula to determine the rate payments of community-owned energy generators. The nature of community owned projects ensures they have a positive economic and social impact in the community. The current methodology of rate payments is excessive and has disproportionate impact on community projects.

CASE STUDY:

COMMUNITIES LEAD WITH RENEWABLE ENERGY TARGETS

In 2014 two Victorian towns took it upon themselves to set 100 percent Renewable Energy Targets. Yackandandah in northeast Victoria and Newstead in the Mt Alexander region are aiming to be entirely powered by renewable energy by 2021. With the community push capturing the public imagination, it’s only a matter of time before more communities follow suit.
**RENEWABLE ENERGY POWERED GOVERNMENT**

The government can take steps to ensure public buildings, hospitals, schools, etc, as well as public transport services to procure renewable energy.

Documents obtained by Fairfax in 2014 found that Metro Trains was the state's second largest carbon emitter, and the City of Melbourne says trams make up 10 percent of the city's transport emissions. These statistics point to the sizable renewable energy projects that would be required for a zero-emission transport system. A proposal for solar powered trams is already on the table.

**REDIRECT FOSSIL FUEL SUBSIDIES TO CLEAN-TECH TO DRIVE INNOVATION**

The Andrews government’s recently established $20 million New Energy Jobs Fund is intended to stimulate investment in local manufacturing and clean-tech research, development, and innovation. Redirecting fossil fuel subsidies to renewable energy can bolster the fund.

Both the Grattan Institute and Alternative Technology Association have criticised the $100 million ‘Energy for the Regions’ spend on gas reticulation for regional Victorian towns—a costly program the current government inherited from its predecessor.

Redirecting these funds to advance the renewable energy and clean-tech sector is smart economics and respects the growing sentiment in the community.

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**CONCLUSION**

A coalition of support for growing renewable energy has emerged in Victoria. Key environment groups, unions, and community organisations are calling for the Andrews government to be ambitious when it comes to its forthcoming Renewable Energy Action Plan.

A state government renewable energy policy that sets ambitious and achievable Victorian Renewable Energy Targets and adopts the tools recommended in this report will make Victoria the place to be for renewable energy investment.

The Andrews government can lead on renewable energy where the Federal government has failed. A strong renewable energy policy from the state government will create jobs and attract investment while helping tackle climate change.

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**CASE STUDY:**

**100% RENEWABLE IS DO-ABLE**

In 2010, the think tank, Beyond Zero Emissions, released its Zero Carbon Australia Plan. The crowd-sourced citizen-science project demonstrated that Australia could be powered entirely from renewable energy sources in ten years. Modelling by the Australian Energy Market Operator confirms it’s feasible for Australia to hit 100% renewable energy by 2030.
**APPENDIX I: ASSUMPTIONS FOR VRET 30% BY 2020**

### VICTORIAN DEMAND
*AEMO NEFR (2015 actual data, 2020 medium projection)*

<table>
<thead>
<tr>
<th></th>
<th>2015</th>
<th>2020</th>
</tr>
</thead>
<tbody>
<tr>
<td>Native Demand</td>
<td>43400</td>
<td>45457</td>
</tr>
<tr>
<td>PV</td>
<td>970</td>
<td>2469</td>
</tr>
<tr>
<td><strong>Total Demand</strong></td>
<td><strong>44370</strong></td>
<td><strong>47926</strong></td>
</tr>
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### VICTORIAN GENERATION
*AEMO NEMHMIR 2015*

<table>
<thead>
<tr>
<th>Year</th>
<th>MW</th>
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<tbody>
<tr>
<td>2010-11</td>
<td>56,183</td>
</tr>
<tr>
<td>2011-12</td>
<td>56,218</td>
</tr>
<tr>
<td>2012-13</td>
<td>53,027</td>
</tr>
<tr>
<td>2013-14</td>
<td>51,757</td>
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<tr>
<td>2014-15</td>
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### ANTICIPATED WIND POWER IN VICTORIA, 2020

<table>
<thead>
<tr>
<th>Windfarm</th>
<th>MW</th>
<th># Turbines</th>
</tr>
</thead>
<tbody>
<tr>
<td>Approved Wind Farms</td>
<td>2,336</td>
<td>903</td>
</tr>
<tr>
<td>Subtract 40% RES</td>
<td>96</td>
<td>30</td>
</tr>
<tr>
<td>Subtract Coonooer Bridge</td>
<td>19.4</td>
<td>6</td>
</tr>
<tr>
<td></td>
<td><strong>2,221</strong></td>
<td><strong>876</strong></td>
</tr>
<tr>
<td>Add Dundonnel</td>
<td>312</td>
<td>104</td>
</tr>
<tr>
<td></td>
<td><strong>2,533</strong></td>
<td><strong>971</strong></td>
</tr>
<tr>
<td>Re-rate to 3.2MW</td>
<td>3107.2</td>
<td>971</td>
</tr>
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<table>
<thead>
<tr>
<th>Windfarm</th>
<th>Capacity</th>
<th>C.F. 2014-15</th>
</tr>
</thead>
<tbody>
<tr>
<td>Portland</td>
<td>158</td>
<td>33.44%</td>
</tr>
<tr>
<td>Macarthur</td>
<td>420</td>
<td>27.06%</td>
</tr>
<tr>
<td>Mt Mercer</td>
<td>131</td>
<td>30.95%</td>
</tr>
<tr>
<td>Oakland Hills</td>
<td>67</td>
<td>25.53%</td>
</tr>
<tr>
<td>Challicum</td>
<td>53</td>
<td>28.97%</td>
</tr>
<tr>
<td>Waubra</td>
<td>192</td>
<td>37.99%</td>
</tr>
<tr>
<td>Yambuk</td>
<td>30</td>
<td>34.03%</td>
</tr>
<tr>
<td><strong>Average</strong></td>
<td><strong>30.85%</strong></td>
<td><strong>30.85%</strong></td>
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