OVERVIEW OF AUSTRALIAN WIND ENERGY POLICY AND ISSUES IN 2016

Presentation to: All Energy Conference

Date: 4 October 2016

CLEAN ENERGY COUNCIL

CLEAN ENERGY COUNCIL

The Clean Energy Council (CEC) is the peak body for the clean energy industry in Australia. We represent and work with hundreds of leading businesses operating in solar, wind, energy efficiency, hydro, bioenergy, energy storage, geothermal and marine along with more than 4,000 solar installers.

We are committed to accelerating the transformation of Australia's energy system to one that is smarter and cleaner.

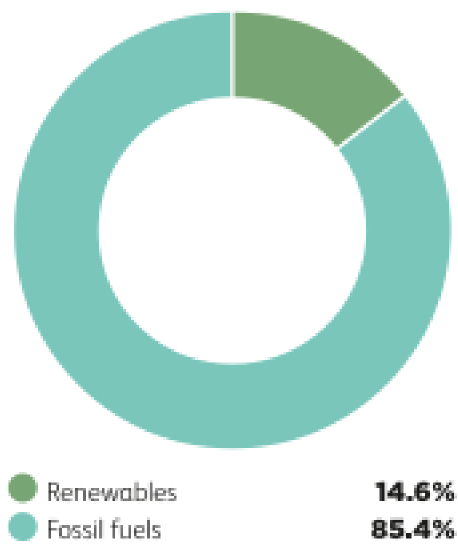
More information at cleanenergycouncil.org.au

TODAY’S ROUND UP

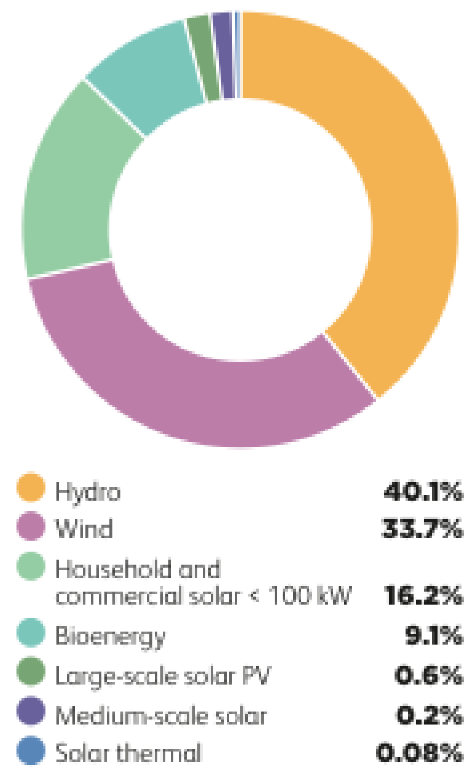
- Statistics overview from calendar year 2015
- Progress towards the RET
- State policies that affect the wind industry
- Issues and the path forward

ENERGY FROM RENEWABLE SOURCES

ANNUAL ELECTRICITY GENERATION IN 2015



ESTIMATED CONTRIBUTION OF EACH TECHNOLOGY TO RENEWABLE GENERATION



CLEAN ENERGY COUNCIL

2015 SNAPSHOT

RENEWABLE ENERGY GENERATION*

TECHNOLOGY	GENERATION (GWh)	PERCENTAGE OF RENEWABLE GENERATION	PERCENTAGE OF TOTAL GENERATION	EQUIVALENT NUMBER OF HOUSEHOLDS POWERED OVER COURSE OF THE YEAR**
Hydro	14,046	40.1%	5.87%	2,675,389
Wind	11,802	33.7%	4.93%	2,248,005
Household and commercial solar < 100 kW	5655	16.2%	2.36%	1,077,167
Bioenergy	3200	9.1%	1.34%	609,524
Large-scale solar PV	206	0.6%	0.09%	39,328
Medium-scale solar	70	0.2%	0.03%	13,315
Solar thermal	27	0.08%	0.01%	5143
Marine	0.50	0.001%	0%	95
Geothermal	0.50	0.001%	0%	95
TOTAL	**35,007**	**100%**	**14.63%**	**6,668,060**

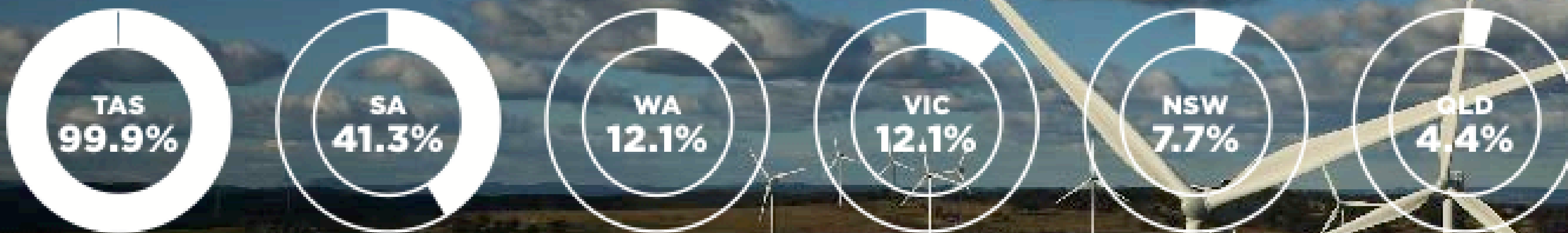
* Clean Energy Council renewable energy database, NEM Watch, Sunwiz; Bureau of Resources and Energy Economics, *Energy in Australia 2014*, Table 4.1 page 45; AECOM, *Australia's off-grid clean energy market – research paper*, 2014, Table 6 page 16

** Based on a per household annual energy use of 5.25 MWh. Source: Australian Energy Market Commission 2015.

CLEAN ENERGY COUNCIL

2015 SNAPSHOT

PENETRATION OF RENEWABLE ENERGY – BY STATE*



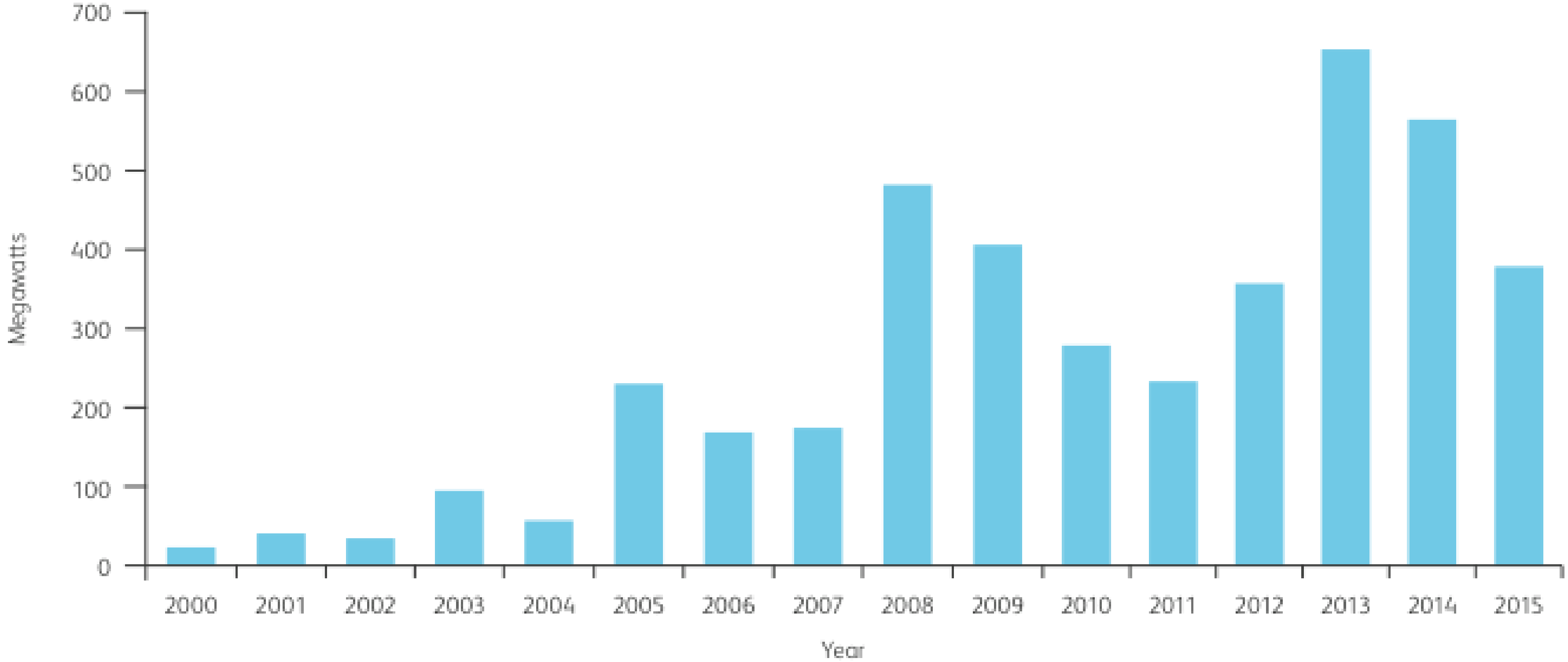
STATE	TOTAL GENERATION (GWh)	FOSSIL FUEL GENERATION (GWh)	TOTAL RENEWABLE GENERATION (GWh)	PENETRATION OF RENEWABLES
TAS	9505	11	9494	99.9%
SA	12,270	7199	5071	41.3%
WA	19,185	16,864	2321	12.1%
VIC	55,599	48,875	6724	12.1%
NSW	63,469	58,614	4856	7.7%
QLD	60,010	57,385	2625	4.4%

* Total generation figures include data from National Energy Market, the West Australian wholesale electricity market and solar PV. The ACT is part of the NSW region and there is no data for the small NT grid. Some of the Snowy Hydro scheme in NSW is counted as Victorian generation by AEMO. Please note: These figures are not the same as the total electricity generation, as non-scheduled and off-grid generators are not included in this data (other than domestic solar). Source: NEM Watch, SunWiz

CLEAN ENERGY COUNCIL

WIND

ANNUAL INSTALLED WIND CAPACITY IN AUSTRALIA



WIND

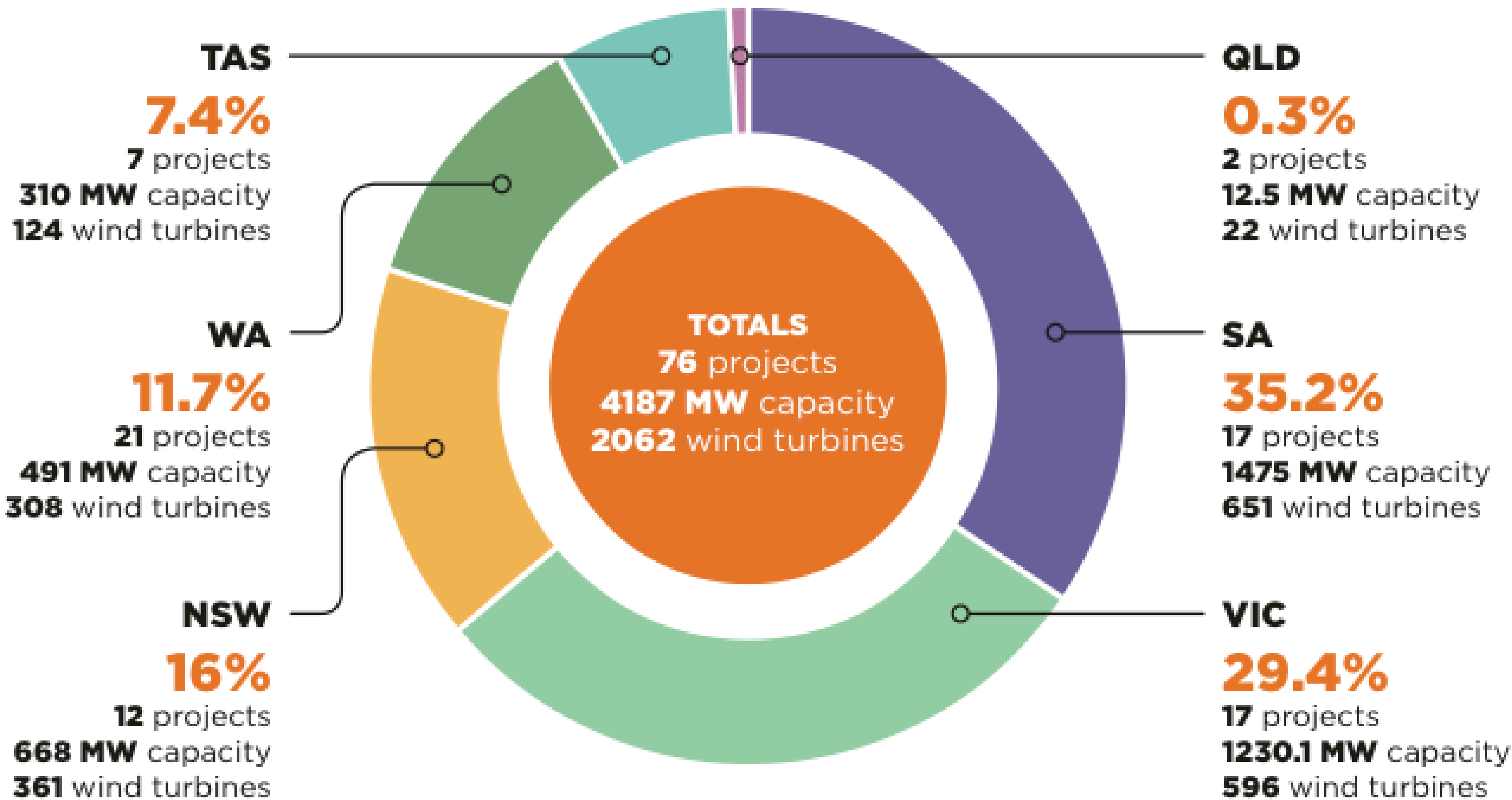
WIND FARMS COMMISSIONED IN 2015

OWNER	LOCATION	STATE	CAPACITY (MW)
Banco Santander and BlueNRGY	Taralga	NSW	106.8
Pacific Hydro	Portland Stage 4 (Cape Nelson North and Cape Sir William Grant)	VIC	47.2
Mitsui & Co Ltd	Bald Hills	VIC	106.6
Electricity Generating Public Company (EGCO)	Boco Rock	NSW	113
Future Energy	Chepstowe	VIC	6

WIND FARMS UNDER CONSTRUCTION AT END 2015

OWNER	LOCATION	STATE	EXPECTED COMMISSION YEAR	CAPACITY (MW)
RES Australia	Ararat	VIC	2017	240
Neoen	Hornsdale Stage 1	SA	2017	105.6
Windlab	Coonooer Bridge	VIC	2016	19.8

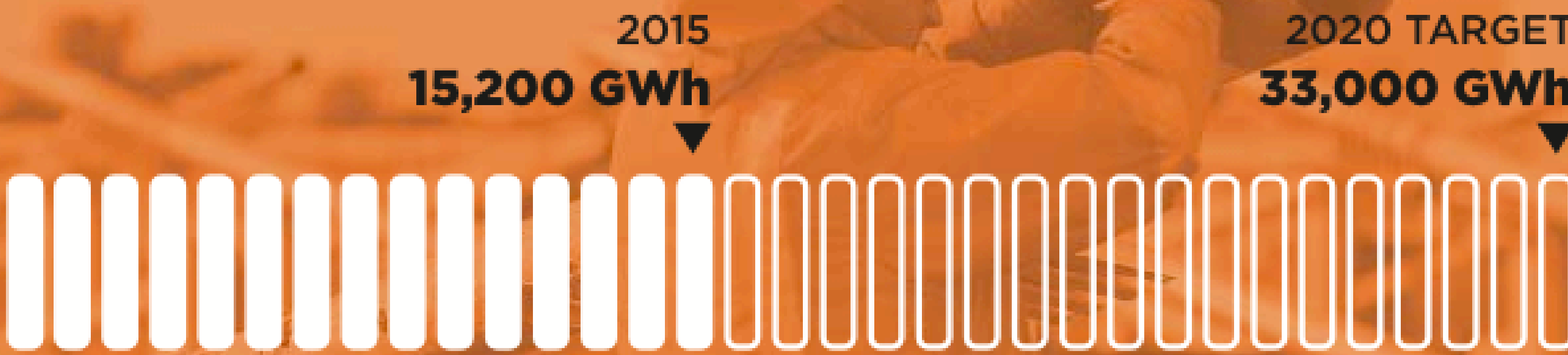
WIND



CLEAN ENERGY COUNCIL

INDUSTRY OUTLOOK

PROGRESS TOWARDS THE LARGE-SCALE RENEWABLE ENERGY TARGET



BENEFITS OF THE RENEWABLE ENERGY TARGET

$40.4B
in investment

15,200
jobs

CLEAN ENERGY COUNCIL

PROGRESS TOWARDS THE LRET

- The Clean Energy Australia report records all renewable energy generation across Australia, including that not supported by the Renewable Energy Target.
- This is mostly Hydro built before 1997 and accounts for between 13,000 – 15,000 GWh of renewable energy generation per year. (about 14,000 GWh in 2015).
- The table below outlines progress to meet the revised LRET of 33,000 GWh by 2020.

Australian renewable energy generation in 2015	35,000 GWh
Existing annual generation built under the LRET	15,200 GWh
New generation needed to meet 33,000 GWh by 2020 LRET	18,000 GWh
New capacity needed to meet 2020 LRET	~ 6,000 MW

MEETING THE RET

- With about 18,000 GWh annual generation required in addition to current operational plant, we'll need around 6,000 MW of capacity
- There is more than enough capacity already approved
- About 1,000 MW of renewable energy has been committed or commenced construction since the RET target was resolved mid last year, about 700 MW count under the RET.
- Momentum is building, about 450 MW was committed in the last few months.

ACHIEVING A POWER SHIFT

1. Ensure long-term and transparent carbon reduction targets
2. Set strong and long-term renewable energy targets
3. Innovation that delivers the next generation of clean energy solutions with appropriate institutions and support for R&D
4. Smart regulation for a 21st century energy system that creates a competitive market and empowers consumers
5. Cement public support through ongoing focus on improving the way in which the sector interacts with consumers and communities

WIND POLICY IN THE STATES

Queensland

- Committed to 50% renewable energy by 2030 in May this year
- Ergon Energy committed to a 12.5 year PPA for the 170MW Mt Emerald wind farm. Expected to start construction early 2017.
- Released a new wind farm state code in July this year

WIND POLICY IN THE STATES

Victoria

- Huge new targets set in June this year.
  - 25 per cent by 2020 and 40 per cent by 2025.
  - Consultation on auction scheme design undertaken in August

- 100 MW purchasing scheme results released in July
  - Kiata – 30MW. Windlab project 50 km northwest of Horsham
  - Mt Gellibrand – 66MW. Acciona project 17 km west of Winchelsea

- Host to two ACT projects, Coonooer Bridge operating and Ararat wind farm under construction
- New inquiries and applications into the Planning Department

WIND POLICY IN THE STATES

New South Wales

- Planning framework released late July for public consultation. The framework replaces the existing guidelines, still in draft as of December 2011
- White rock wind farm under construction in the New England area
- Sapphire wind farm awarded a 100 MW contract under ACT auction round 2.

WIND POLICY IN THE STATES

South Australia

- Generation target of 50% renewable energy by 2025
- Investment target of $10b in clean energy by 2025, they have already secured over $5.5b
- Hornsdale Stage 1 is under construction (100 MW) and Hornsdale Stage 2 due to go ahead under ACT scheme.
- Pastoral Act changed opening up crown land to development
- Low Carbon Investment Plan released December 2015.

WIND POLICY IN THE STATES

ACT

- Generation target of 100% renewable energy by 2020
- Reverse auction scheme has supported several wind farms:
- Round 1:
  - Coonooer Bridge, VIC, 20 MW
  - Ararat, VIC, 80 MW
  - Hornsdale stage 1, SA, 100 MW
- Round 2:
  - Hornsdale stage 2, SA, 100 MW
  - Sapphire, NSW, 100 MW
- Final technology neutral 200 MW round
  - Hornsdale stage 3, SA, 109 MW
  - Crookwell 2, NSW, 91 MW

INDUSTRY ISSUES 2016

- Grid integration and the South Australian question
- State government project approvals and modification processes
- State government energy policies and purchase schemes
- Investment certainty and long term federal emissions policy

COMMUNITY ENGAGEMENT

- Community benefits – various models being trialled
- ACT Auction has community benefits requirements, Victoria likely to follow suit
- Engagement an ongoing area of focus for the industry
- Wind strategy involves some discreet projects with the aim of improving the industry’s practices.

THANKS

Questions?

CLEAN ENERGY COUNCIL