

What is the role of renewable energy in Origin's business?

Key findings

- Origin's two renewable energy power generation assets have a combined capacity of 270 megawatts, 4.4% of Origin's generating portfolio. The Eraring coal-fired power plant accounts for 47% of Origin's generation portfolio, with gas generators and cogeneration plants making up 48% of generating capacity.
- The share of electricity produced by renewables amongst Origin's electricity generating assets has fallen to less than 1% in the financial year ending 2014, largely the result of reduced output at the Shoalhaven Hydro plant.
- We estimate that 0.6% of Origin's FY2014 revenue was sourced from renewable energy generation. This figure has declined from just over 1%, seemingly due to reduced production at the Shoalhaven Hydro plant.
- Beyond these figures, Origin Energy is aggressively expanding gas operations, in particular the Australia Pacific Liquefied Natural Gas plant, which is commencing operations in 2015 and will feed and compress coal seam gas into LNG for export.

Power capacity

Origin's electricity generating assets are as follows:

Capacity (MW)			
Coal	Eraring	2,800	47%
Oil & Gas	Uranquinty	640	11%
	Darling Downs	630	10%
	Mortlake	550	9%
	Mt Stuart	414	7%
	Quarantine	216	4%
	Ladbroke Grove	80	1%
	Roma	74	1%
Renewable	Shoalhaven	240	4%
	Cullerin Range	30	~%
Cogeneration	Osborne	180	3%
	Worsley	120	2%
	Bulwer Island	32	~%
Total		6,086	100%

There has been no significant shift in the portfolio either owned or part-owned by origin in recent years. The only shift has been an 80 MW/year increase in the capacity of Eraring.

Power generation

The table below shows how Origin's gross and proportional power generation changes over recent years. The renewable energy generation figures are so small that we will need to expand on them here to provide greater accuracy. Proportionally, the combined generation figures of Shoalhaven Hydro plant and Cullerin Range Wind Farm amounted to 1.04% of Origin's electricity generation in FY 2012, 1.11% in FY 2013 and 0.63% in FY 2014.

The most notable shifts in generation are the ramping up of the Mortlake gas-fired power plant over the three years observed, and the drop off in generation from Shoalhaven hydro plant to almost zero in FY 2014.

The electricity generated by assets owned or part-owned by Origin was almost equal to that of competitor AGL in FY 2014.

Generation (GWh)		FY 2012		FY 2013		FY 2014	
Coal	Eraring	11099	74%	10739	68%	11386	66%
Oil & Gas	Uranquinty	171	1%	338	2%	223	1%
	Darling Downs	3207	22%	2807	18%	3256	19%
	Mortlake	89	1%	1307	8%	1666	10%
	Mt Stuart	6	~%	56	~%	8	~%
	Quarantine	64	~%	144	1%	256	1%
	Ladbroke Grove	79	1%	90	1%	228	1%
	Roma	16	~%	37	~%	64	~%
Renewable	Shoalhaven	57	~%	85	~%	4	~%
	Cullerin Range	98	0.6%	96	0.6%	104	0.6%
Cogeneration	Osborne	0	0%	0	0%	0	0%
	Worsley	0	0%	0	0%	0	0%
	Bulwer Island	0	0%	0	0%	0	0%
Total		14,886		15,699		17,195	

Revenue

In the financial year to June 2014, AGL produced 60% of its revenue from Electricity, 25% of its revenue from Gas, and 12% from generation sales to the pool. If we use the proportion of AGL's disclosed electricity generation from renewables in the 2014 financial year (20%), to imply what portion of their revenue is from renewables, then it is approximately 14%:

Revenue (\$m)	FY 2014
Energy Markets	11,607
Exploration and Production	756
Contact Energy	2,155
TOTAL	14,518

We estimate the revenue derived from renewable energy at 0.6%, or approximately \$82 million. Note that this does not account for any benefits likely gained through the production and sale of renewable energy, such as renewable energy certificates.

This figure was calculated by multiplying Origin's FY 2014 generation figures by the proportion of the Energy Markets and Contact Energy sources of revenue that make up Origin's overall revenue.

Greenhouse gas emissions

We estimate the annual greenhouse gas emissions of Origin's electricity generation assets at 12,737,691 tonnes of CO₂ e, approximately 2.4% of Australia's annual emissions as of March 2015. This figure (which we calculate based on output multiplied by the emissions intensity of each generating facility) is roughly equal to that used by the Australian Conservation Foundation in a recent report: [Australia's top ten climate polluters](#), which used figures reported through the National Greenhouse and energy Reporting scheme.

Anticipated changes

Origin Energy has recently made a major play in to the LNG market, as part owner of the APLNG project. This is due to commence producing LNG from coal seam gas for export in 2015 and is likely to significantly alter Origin's balance sheet, further reducing the role of renewable energy as part of its overall business and revenue.

Without significant investment in new renewable energy capacity or acquisition of existing capacity, it is unlikely that renewable energy will remain more than a fraction of a percent of Origin's overall revenue.

Sources used for this research:

http://www.originenergy.com.au/files/hy15-results-presentation_final.pdf
<http://www.originenergy.com.au/files/Origin-annual-report-2014-WEB.pdf>
http://www.originenergy.com.au/files/Origin_Energy_2013_Annual_Report_web-ready.pdf
http://www.originenergy.com.au/files/2012_Annual_Report.pdf
<http://www.environment.gov.au/system/files/resources/36653a43-4e2f-4b3a-bd1d-0d676778f780/files/nggi-quarterly-update-sept-2014.pdf>