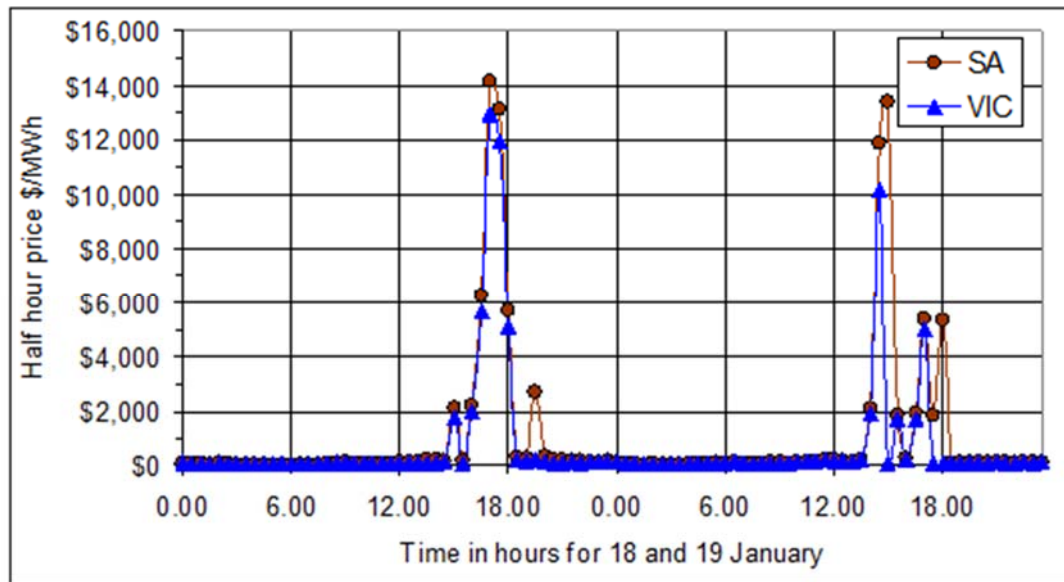


Analysis of electricity costs for 18 and 19 January heat wave

Paul Miskelly and Tom Quirk

The cost of electricity for the 18 and 19 January two day heat wave may be found from data on the AEMO website. For January there are half hour demand and price tables for each day. The extra cost of 18 and 19 January can be estimated by finding the cost differences from the average daily costs over the period 1 to 17 January after adjusting these costs to match the higher demand on 18 and 19 January.

The changes in prices can be clearly seen in the figure below with South Australia and Victoria having price spikes at the same time (AEMO data). New South Wales and Queensland had no such trouble.



The table below shows an estimate of the extra cost; The AEMO website dashboard gives average daily prices that are not weighted by the change of demand and price during the day. There are high prices with high demand and low prices with low demand. The costs below have been calculated using the weighted electricity prices.

State	Hourly averages	South Australia		Victoria	
		From 30 min data	AEMO	From 30 min data	AEMO
18 January	Average MW	2,016		6,444	
	Average price/MWh	\$1,404	\$1,074	\$1,210	\$905
Total day cost		\$68,015,878		\$187,279,332	
19 January	Average MW	2,091		6,878	
	Average price/MWh	\$1,195	\$1,012	\$648	\$523
Total day cost		\$59,917,331		\$106,777,887	
1 to 17 January week day average	Average MW	1,409		4,865	
	Average price/MWh	\$91	\$87	\$84	\$82
Total day cost		\$2,865,478		\$9,817,774	
Total day cost	Scaled to 18,19 January demand	\$4,177,600		\$13,450,111	
18 to 19 January	Extra costs	\$119,578,009		\$267,156,997	

The total extra electricity cost is some \$400 million. This is an amazing example of the problems resulting from the introduction of too much renewable energy and the closure of coal burning power stations.