



NSWIC
NEW SOUTH WALES
IRRIGATORS'
COUNCIL



A Trial Program to Achieve Better Electricity Prices

NSW Irrigators' Council and Cotton Australia

Progress Update 2

20 November 2013

Electricity Trial

We were able to expand the electricity trial since our last update in June 2013. The trial now consists of 17 participants (NMIs). The table below shows the areas and data scope that is available;

	Area	Time Period
1	South	November 2008 - May 2013
2	South	July 2008 - April 2013
3	North	February 2008 - April 2013
4	North	January 2009 - December 2012
5	South West	July 2011 - June 2013
6	South West	July 2011 - April 2013
7	South West	July 2011 - June 2013
8	South	July 2008 - May 2013
9	South	September 2009 - June 2013
10	South	July 2008 - June 2013
11	North	July 2010 - June 2013
12	North	July 2010 - June 2013
13	North	July 2010 - June 2013
14	Central	January 2010 - June 2013
15	Central	January 2010 - June 2013
16	Central	July 2010 - June 2013
17	Central	July 2010 - June 2013

Data Results

The trial data has shown some interesting results regarding electricity usage patterns, yearly electricity usage and electricity cost distributions.

Total Electricity Usage

The yearly consumption of electricity is (in most cases) over 160,000kWh/year for each participant. This classifies the participants as 'large scale electricity users' in NSW. The contract terms applicable to these users are different to small scale users (under 160,000 kWh per year).

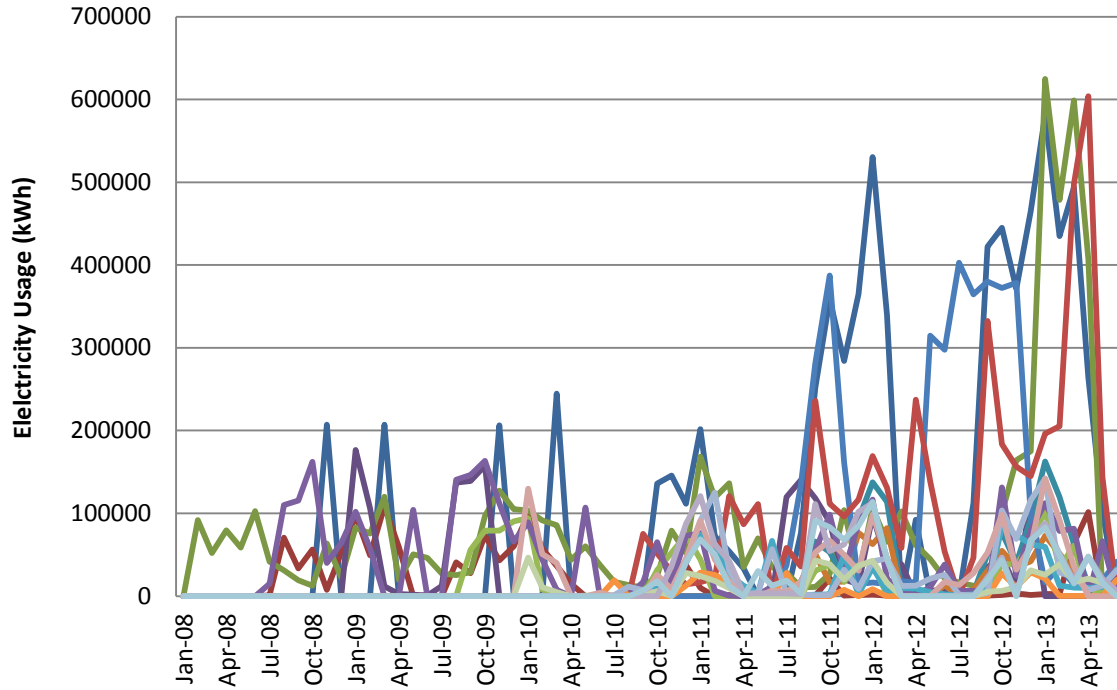
2008	2009	2010	2011	2012	2013
207192	413455	637827	1696963	2778216	1876461
221462	560965	246725	35985	10275	170709.5
575812	806555	619684	770149	884232	2109641
NA	745563	0	503708.6	404461.477	0
NA	NA	NA	234906.1	534773.7	360204.7
NA	NA	NA	174057.8	333449.7	160495.6
NA	NA	NA	1015986	2672782.78	139447.9
NA	NA	170458.4	1011880	1651901.19	1647055
NA	304424	260350	178817	188882	207546
507045	891637	418984	384800	445016	339686
NA	NA	61599	300119	296909	135254
NA	NA	32126	105608	75810	41603
NA	NA	68247	357018	453398	244345
NA	NA	304362.1	382555.8	445025.694	269869.2
NA	NA	96230.79	189969	112248.964	118492
NA	NA	123631.6	570859.6	293699.663	232913.6
NA	NA	65970.8	523618.1	288973.806	212247.3

All figures are provided in kWh

Overall Electricity Usage

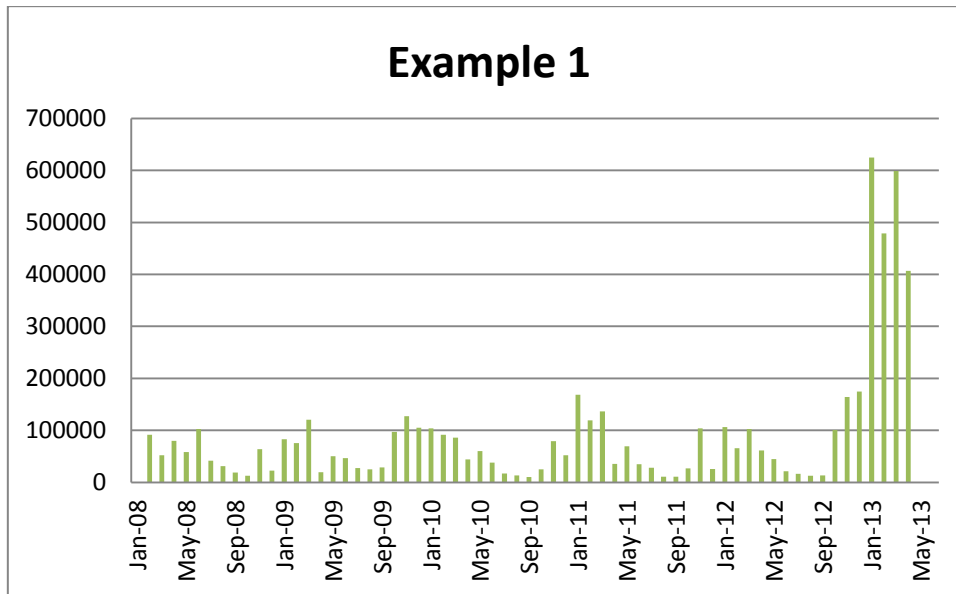
The trial data has confirmed that the electricity usage pattern of irrigators is highly variable. However it has also shown that electricity usage has increased since 2010.

Electricity Usage



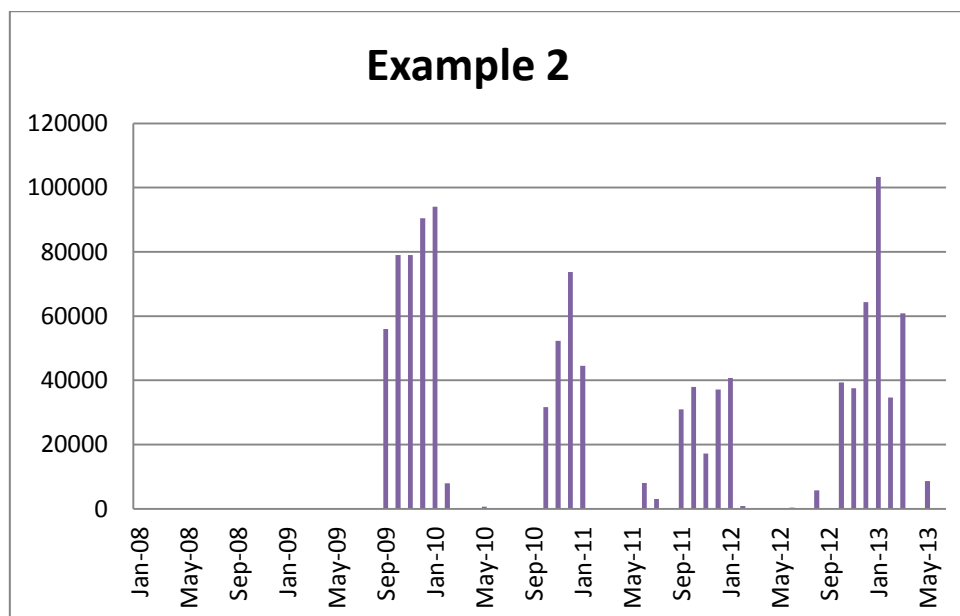
Decomposing the data into the individual time series has highlighted that there is not one representative electricity using irrigator in NSW. Four of the most common patterns are shown below;

Example 1 shows a regular electricity usage pattern with the exception of 2013.



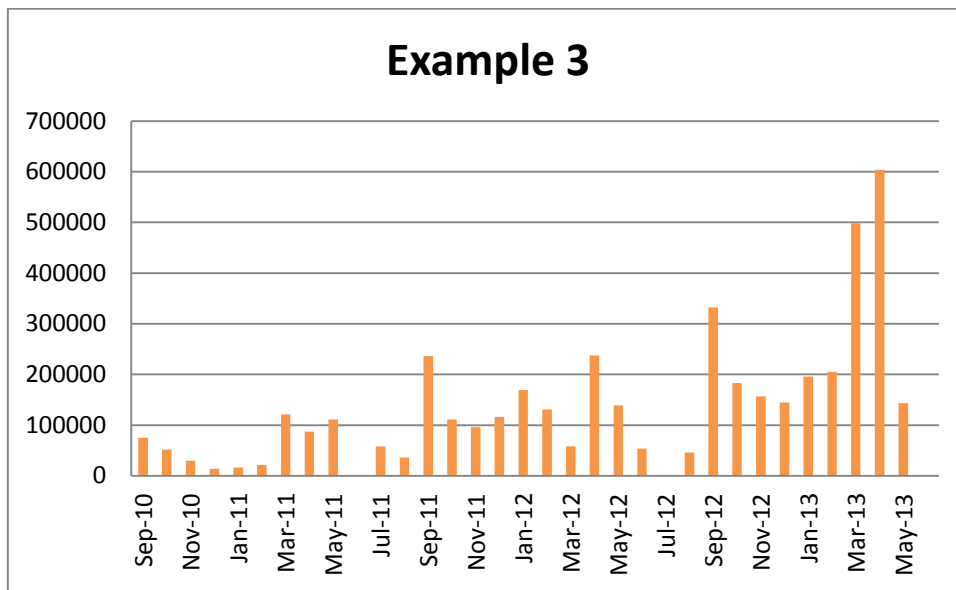
(All figures are given in kWh)

Example 2 is representative for a number of trial participants. The usage pattern indicates that there are several months a year where no electricity is used.



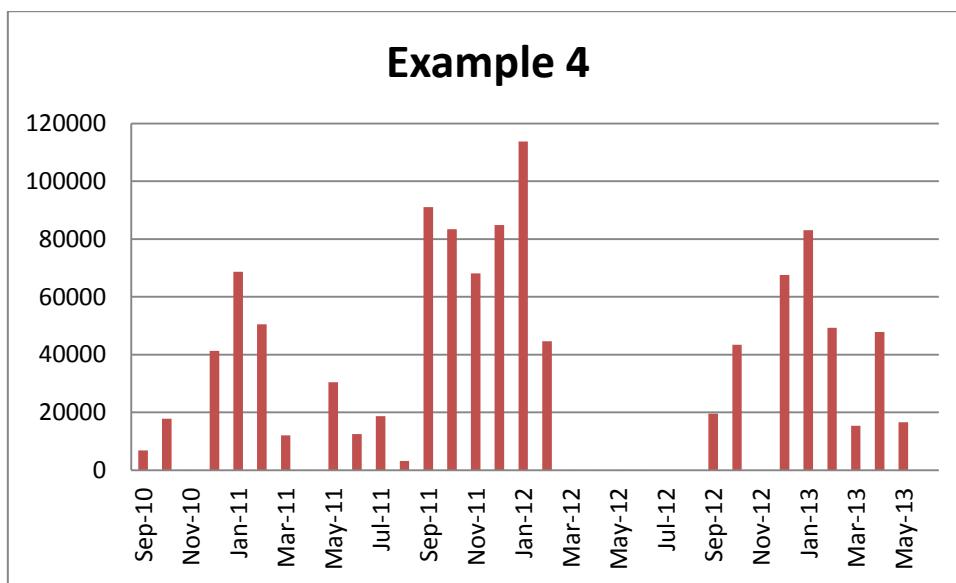
(All figures are given in kWh)

Example 3 shows that electricity use in irrigation has increased since 2010.



(All figures are given in kWh)

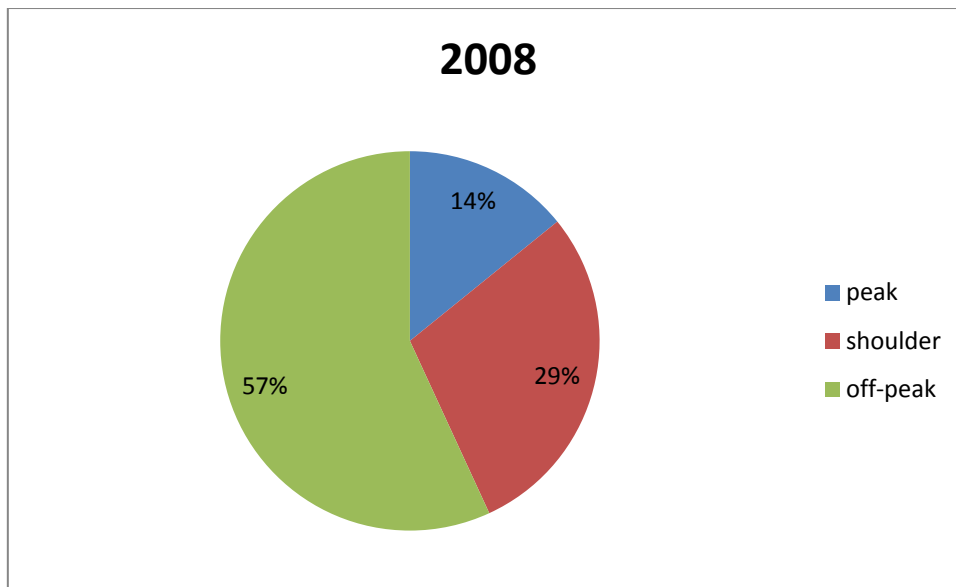
Example 4 highlights that there are often reoccurring peaks around the December and January months.



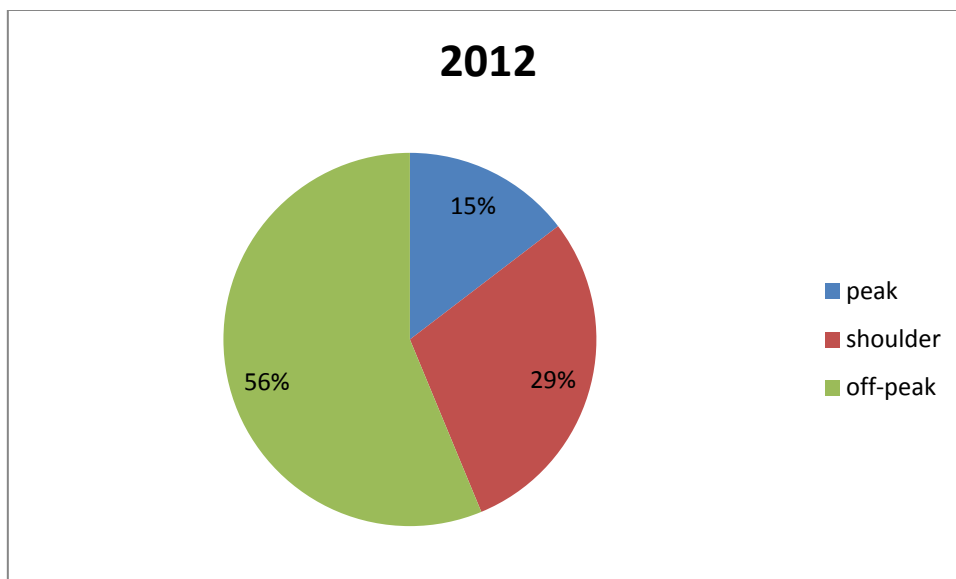
(All figures are given in kWh)

Peak / Shoulder / Off-Peak Usage

The electricity trial data suggests that there has been no fundamental change in the electricity usage behaviour of irrigators since 2008. The distribution of peak to shoulder to off-peak has remained reasonably constant over the last five years. This might suggest that irrigators have insufficient ability to amend their usage (i.e. an inelastic demand for electricity).



(representative for most trial participants)

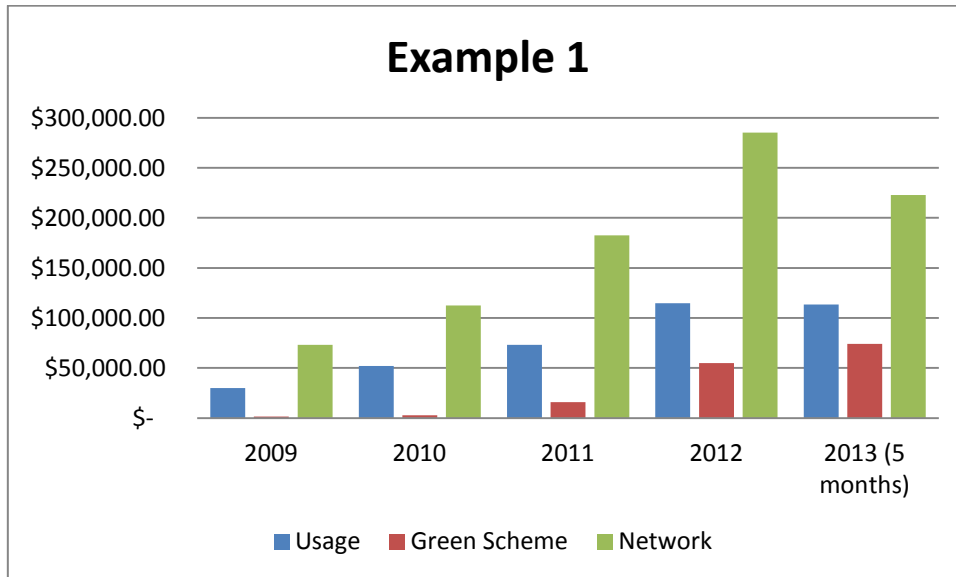


(representative for most trial participants)

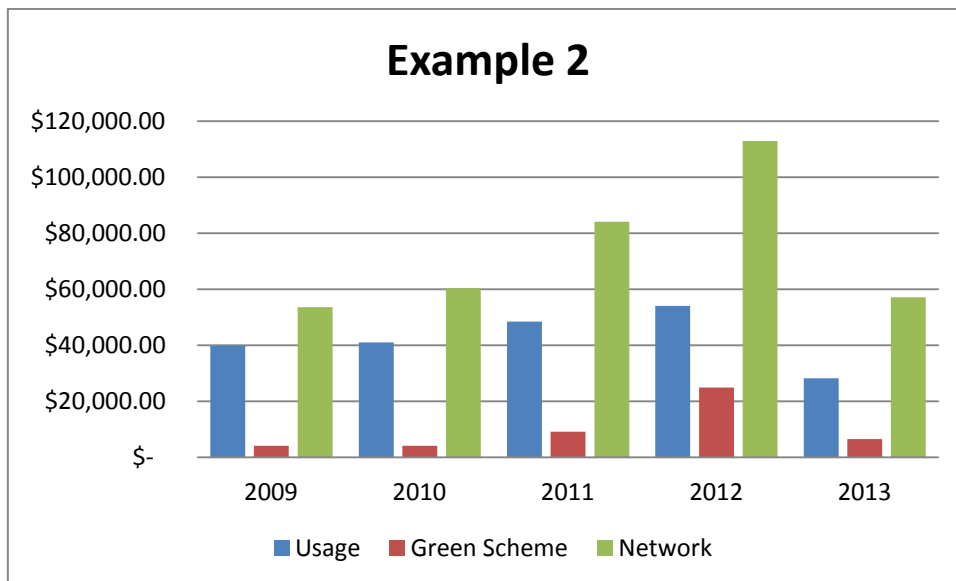
Total Electricity Costs

The electricity trial has highlighted that total electricity costs have increased significantly since 2009. Disproportionately, network charges have increased most significantly (in dollar terms) during that timeframe.

Example 1 shows a case where the electricity usage has increased between 2009 and 2013. The impact of network charges is more profound since the tariff rates for network have increased and the electricity usage has gone up.



Example 2 highlights a case where electricity usage has remained constant between 2009 and 2013. The impact of network charges is based on rising tariff rates.



Carbon Charge

The total dollar impact of the carbon charge between July 2012 and June 2013 was above \$200,000 for all trial participants. As a proportion of total electricity costs, the carbon charge made up between 5.16% and 10.78% of an individual irrigator's electricity bill in 2012 and between 4.62% and 11.1% in 2013. The average in 2012 was 6.83% and 8.28% in 2013¹.

Network Charges

Network charges remain the largest cost component of an individual irrigator's electricity bill. Overall, the trial data found that between 55% and 65% of the total electricity costs can be attributed to these network charges. A breakdown of the average network costs between 2009 and 2013 can be found in the table below²;

	2008	2009	2010	2011	2012	2013
Average	55%	59%	65%	64%	63%	61%

¹ The figures are based on those participants where information on the carbon charge was available.

² The figures are based on trial participants.