

Report to	Sustainable development panel	Item 7
	25 November 2015	
Report of	Executive Head of regeneration and development	
Subject	Photo-voltaic (PV) panel array on the roof of City Hall	

Purpose

To update members on the photo-voltaic (PV) panel array on the roof of City Hall.

Recommendation

To consider the progress made.

Corporate and service priorities

The report helps to meet the corporate priorities prosperous city via delivering activities to increase energy efficiency.

Financial implications

None in addition to those already budgeted for.

Ward/s: All wards

Cabinet member: Councillor Bremner – Environment and sustainable development
Councillor Thomas – Fairness and equality

Contact officers

David Moorcroft – Executive head of regeneration and development 01603 212226

Richard Willson – Environmental strategy manager 01603 212312

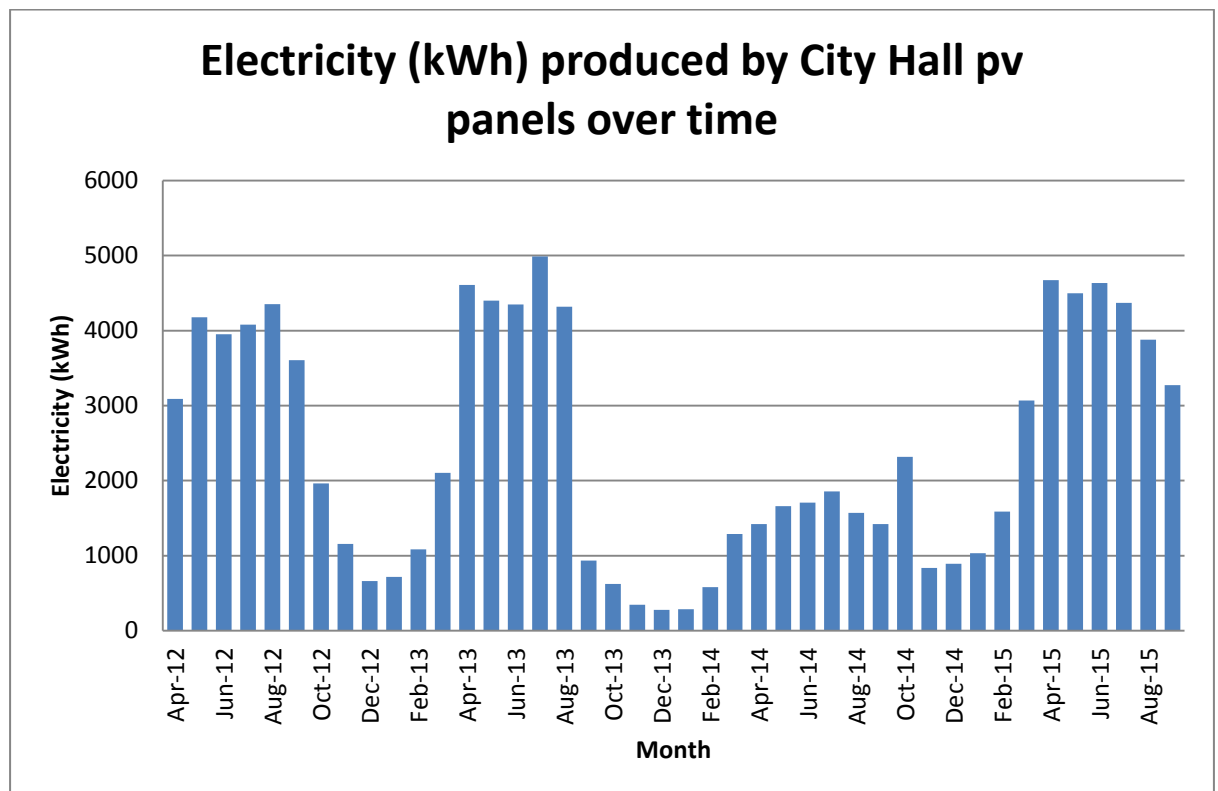
Background documents

None

Report

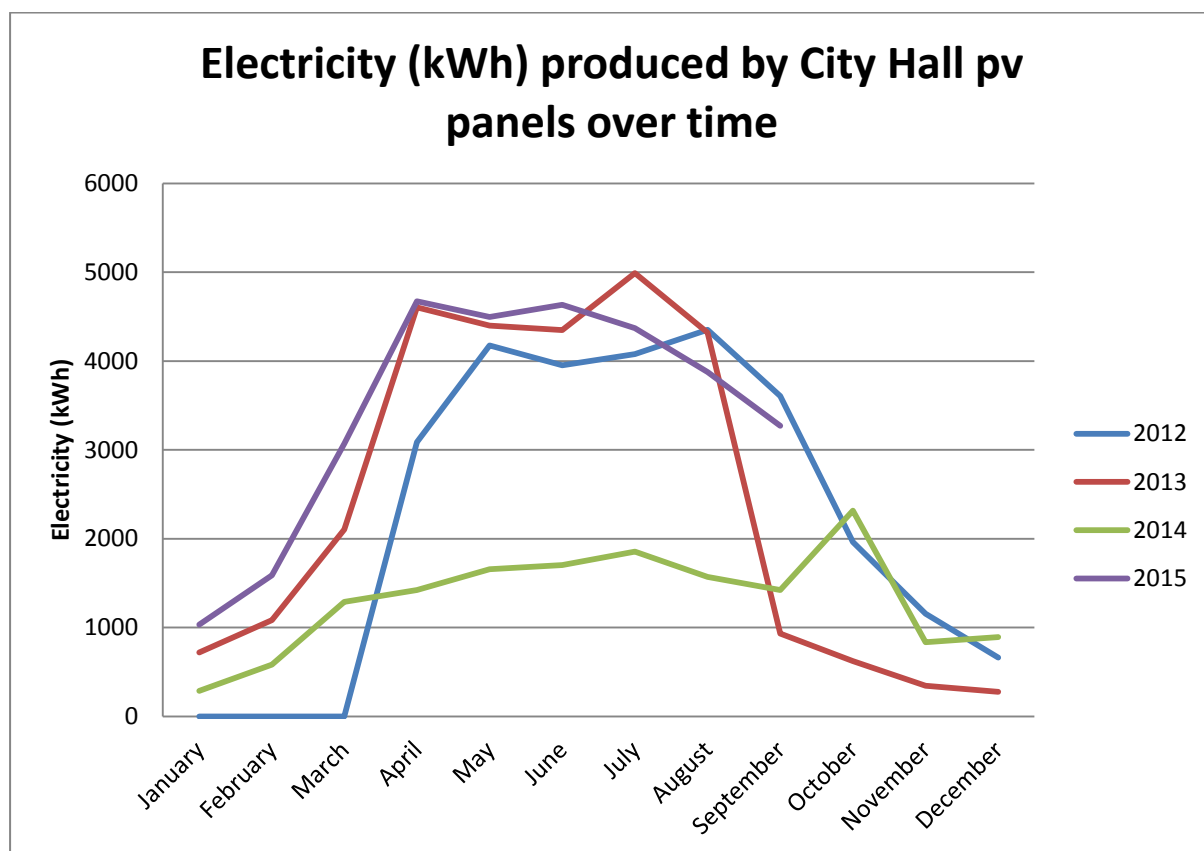
1. The photo-voltaic (PV) panel array on the roof of City Hall became fully operational in March and daily kWh electrical output data from the panels has been collected since 27 March 2012. The system consists of 144 panels and has the potential maximum output of 36KW under optimal conditions. The purpose of this report is to provide an update on how the panels are performing.
2. The PV panels work by converting sunlight into electrical energy via semi-conductor material in the pv cells. Essentially, the more sunlight hits the cells, the more electricity is produced.
3. Graph 1 (below) shows the number of kWh hours of electricity produced by the City Hall panels between April 2012 to September 2015.

Graph 1:



4. There was a significant drop in electricity production from the panels between late 2013 to late 2014. This occurred when over half of the panels had to be disconnected on 30 August 2013 due to essential maintenance work needing to be carried out on the roof of city hall. The panels were reconnected on 23 September 2014 which is reflected by the peak in production during October 2014. However, our contractors tried to mitigate against the impact of the work on electricity production by ensuring that 70 panels remained operational during the work.

5. The profile of Graph 2 (below) shows clearly, and as expected, that most electricity is produced by the panels during the March to September period and production tails off significantly during October to February.



Graph 2 (above)

6. Table 1 shows the percentage of the optimal electricity output achieved by the City Hall PV array to date. However, it should be noted that optimal figures do not take in account any shadow which may fall across the panels during the day, although this has been designed out where possible.

Table 1:

% of Optimal Output	Apr	May	Jun	Jul	Aug	Sept	Oct	Nov	Dec	Jan	Feb	Mar
2012-13	56	73	61	61	76	79	52	42	35	38	42	55
2013-14	84	77	68	75	76	20	16	12	15	15	23	34
2014-15	26	29	27	28	26	31	61	30	47	54	62	81
2015-16	85	79	72	66	68	71						

- 7 In total, since the panels were installed in March 2012, they have produced £16,555 of Feed in Tariff, or £385 per month on average, despite 74 panels

having been disconnected for 12 months of this time. In addition, the council has also saved £12,315 in free electricity over the same period.

- 8 The environmental strategy team will continue to monitor the PV panels performance, and this will be reported to the sustainable development panel.