

Report to Sustainable development panel
25 September 2013
Report of Executive head of strategy, people and democracy
Subject Photo-voltaic (PV) panels on City Hall roof

Item

7

Purpose

The purpose of this report is to update the committee on the performance of the PV panels on City Hall.

Recommendation

To consider the findings of the report.

Corporate and service priorities

The report helps to meet the corporate priority Value for money services and the key action to “reduce the council's carbon emissions through a carbon management programme”.

Financial implications

There are no direct financial implications.

Contact officers

Russell O’Keefe, executive head of strategy, people and democracy 01603 212908

Richard Willson, environmental strategy manager 01603 212312

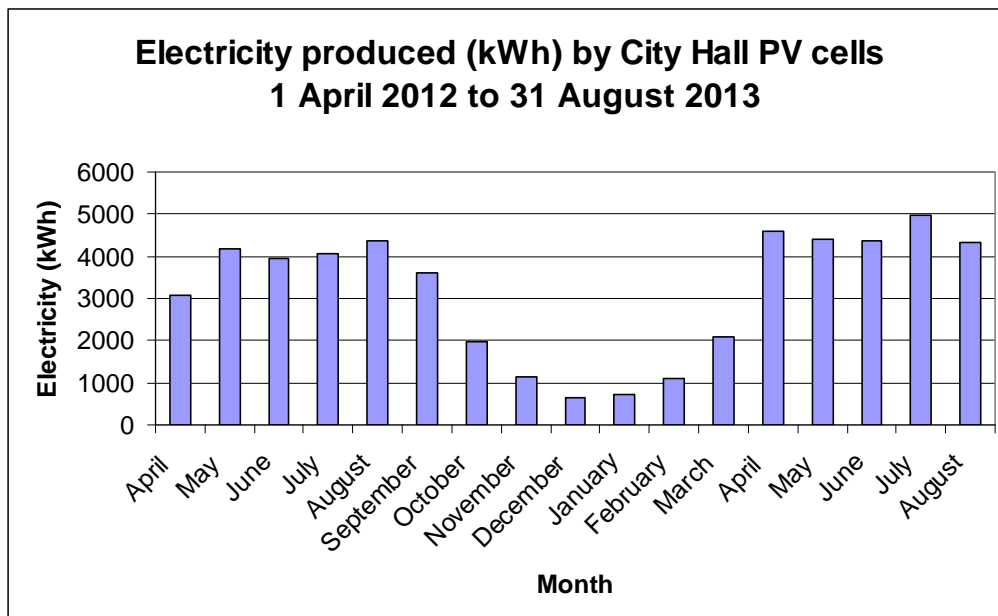
Claire Tullett, environmental strategy officer 01603 212545

Background documents

None.

Report

1. The photo-voltaic (PV) panels on the roof of City Hall became fully operational in March 2012 and daily kWh electrical output data from the panels has been collected since 27 March 2012. The system capability is 36KW maximum under optimal conditions. The purpose of this report is to provide an update on how the panels are performing.
2. Graph 1 (below) shows the number of kWh hours produced for April 2012 to September 2013. Summer 2012 was the wettest summer for 100 years and one of the dullest summers on record with just 413 hours of sunshine according to Met Office figures. The PV panels work by converting energy from sunlight into electrical energy via semi-conductor material in the PV cells. With a poor level of sunlight the panels cannot produce the optimal levels of electricity. Consequently the dull and wet weather summer affected the levels of energy produced.
3. The amount of sunlight dropped over the winter months as expected with shortened winter days. Spring got off to a slow start following a late winter snap and prolonged snowfall in March, consequently sunlight was only 81% of expected levels during March.
4. However, on the whole from April onwards there has been increased levels of sunlight hours in summer 2013 which has meant increased output from the PV array. This can be seen on Graph 1 where April, May, June and July outperformed the same months of the previous year. Optimal performance figures do not take into account any shadow which may fall across the panels throughout the day which will also impact on output, although this has, as far as possible, been designed out of the project.



5. To set this in context, table 1 (below) shows the optimal performance of the panels against actual performance for April 2012 to August 2013.

Month	Average hours sunlight	Optimal Output	Actual Output	% of Optimal Output
April	6	5508	3088	56
May	6	5692	4177	73
June	7	6420	3952	61
July	7	6634	4078	61
August	6	5692	4353	76
September	5	4590	3607	79
October	4	3794	1962	52
November	3	2754	1157	42
December	2	1897	663	35
January	2	1897	719	38
February	3	2570	1086	42
March	4	3794	2103	55
April	6	5508	4606	84
May	6	5692	4399	77
June	7	6426	4349	68
July	7	6640	4989	75
August	6	5692	4319	76

6. To 31 August 2013 the Feed in Tariff from electricity produced by the PV panels is £8321.22, or £488 per month on average. As well as the Feed in Tariff the council has also saved an additional £6562.28 in the free electricity which the PV panels have created over the same period of time.
7. The Environmental strategy team will continue to monitor the PV panels performance, and this will be reported to the Sustainable Development Panel annually.