



HKD Energy

Annual Report 2017-18

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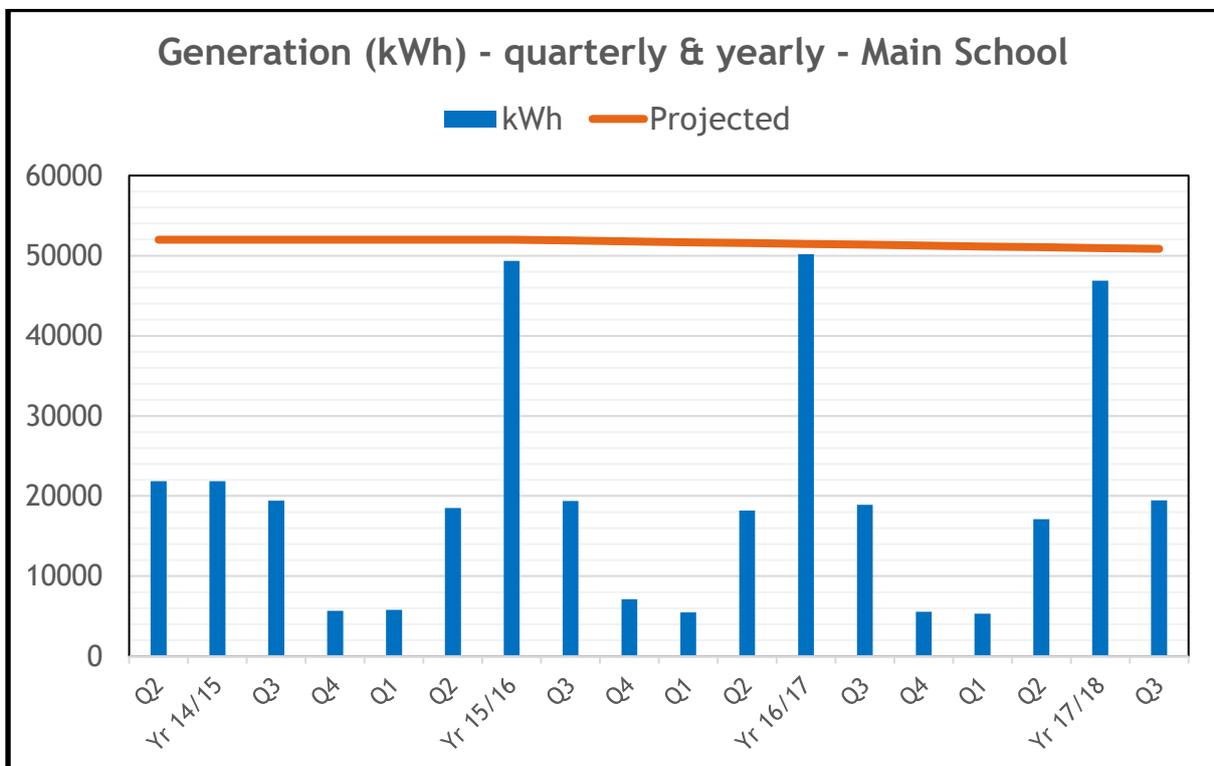
HKD Energy is a Community Benefit Society, formed in 2014 to develop renewable energy projects, promote energy efficiency, and create awareness of environmental and energy issues in our villages of Hassocks, Hurstpierpoint, Keymer and Ditchling.

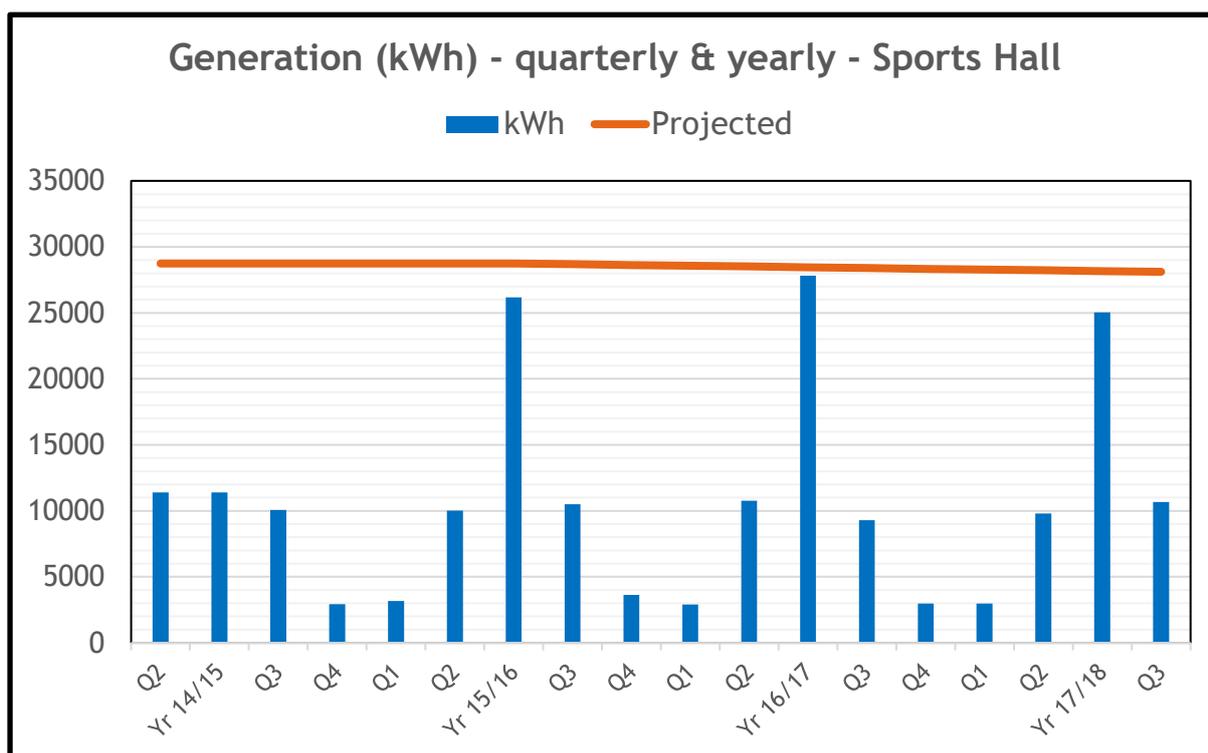
Our vision is to create low-carbon communities, by making buildings more energy efficient and generating the electricity we need from renewable sources.

Downlands School solar project

In February 2015 we installed 307 solar panels on the roofs of Downlands School and Sports Hall in Hassocks and began generating energy in March 2015.

In reviewing the performance of the solar panels in this last year, it should be remembered that, although we all have memories of the long hot summer period, during the year to 30 June we actually had a great deal of wet or overcast conditions. A partial result of this was that the overall performance of the panels was lower than in previous years. The charts illustrate the trends, with all the generation figures for the 2017/18 year being a little lower than in the previous two years.





However, it is noteworthy that we do see the result of the good weather this summer reflected in the Q3 (third quarter) generation figures for the 2018/19 year, which are better than any previous Q3.

The charts show that the yearly generation was somewhat lower than the projected figure, with total generation being 91% of projected. As well as the variability in the weather, there have also been some other contributory factors:

- The building works at the school in 2016/17 had some impact due to the changeover to an upgraded power supply for the Main School, requiring a complete power shutdown during August 2017.
- During a full inspection of the panels in June 2018 it was discovered that two panels on the Sports Hall had broken glass with resulting reduced output (apparently due to seagulls dropping stones).
- The problem of the seagulls fouling the panels (mentioned in previous reports) has continued, with some impact on the output of the panels. This is monitored regularly and it is noticeable that heavy rain does partially clean the panels. We have the on-going frustration that the cost of manual cleaning can only be justified when the level of fouling becomes serious. Fortunately the seagulls seem to congregate in particular areas, leaving the majority of the panels largely unaffected.

After a review of our options it was decided that, as well as replacing the two damaged panels on the Sports Hall, we would also purchase an additional four panels to be stored at the school, in case of further similar problems. Further details will be included in the 2018/19 report.

Solar Traction project

HKD Energy received a grant from Rural Community Energy Fund (RCEF) in May 2018 for a feasibility study on using solar energy to power the railway around Hassocks. We are one of 6 RCEF-funded projects across the south-east that are exploring the potential of solar for the rail network, working together under the auspices of Community Energy South. HKD Energy has commissioned engineering firm Ricardo Ltd to conduct the study, and Community Energy South is leading on development of a power purchase agreement with Network Rail.

RCEF is a £15 million programme, delivered by WRAP and jointly funded by the Department for Environment, Food and Rural Affairs (Defra) and the Department for Business, Energy & Industrial Strategy (DBEIS). It supports rural communities in England to develop renewable energy projects which provide economic and social benefits to the community. For more information on RCEF, visit www.wrap.org.uk/renewables.

Rail electrification in the South East utilises the “third rail” system, with electricity provided by a continuous rigid conductor rail on the ground, rather than an overhead cable system. Our project is investigating the potential to install a solar PV array near the rail track to supply electricity direct to the rail network, rather than via the National Grid. This represents an exciting opportunity for community energy groups like HKD Energy to install a local, dedicated energy scheme, providing benefits to the local community in the form of investment opportunity, community benefit and associated carbon reduction.

The feasibility study follows a project funded by Innovate UK that looked at whether it would be possible to connect solar PV and battery storage to the third rail sections in the southeast rail network. The Innovate UK project was led by Imperial College, 1010 Climate Change Group, Turbo Power Connections and Community Energy South.

During the 2017-18 financial year our consultants Ricardo and Community Energy South began work on the feasibility study, which is expected to be completed by March 2019.

Finances

Financially we had a good year to 30th June 2018, such that we were able to make an early additional donation to Downlands School of £2,500. However, as the performance of the panels at Downlands was slightly lower than projected we have recorded a book loss of £391. This is of no great concern as we continue to generate cash broadly in line with expectations, and ended the financial year with free cash (uncommitted to purchase commitments) in excess of £20,000.

Accounts will be presented at the AGM and made available to shareholders electronically or on paper if requested.

Impacts

While we have not yet been able to develop further renewable energy projects, in a UK policy climate that is much less favourable to community energy, we nevertheless continue to have some impacts.

Carbon saving

Over the 20 year span of the Downlands School project we expect to save the equivalent of some 843 tonnes of carbon dioxide through generating electricity directly from the sun. In this financial year we saved the equivalent of 41.6 tonnes of carbon, so we are firmly on track to meet our target.

Saving money for the school

Over the 20 year project we expect to save Downlands School around £150,000 in electricity costs. In the past year we saved the school around £4,400 in electricity costs.

Educational impacts

The panels and the information generated by the monitoring system are used by teachers at Downlands. Over the 20 year project we estimate that nearly 7,000 pupils will come into close contact with the panels, seeing first-hand how a system like this can cut carbon.

Future plans

Solar Traction project

If the feasibility report indicates a viable project, further development work will need to continue during 2019 with a view to the first project starting in 2020.

Repaying investors

Based on our income to date, we expect to continue to pay interest of 4% to our investors. We also expect to continue the annual repayment of capital to investors.

We are holding a contingency fund to cover the costs of inverter replacements and the possibility of removing panels to allow roof repairs at the school.

Downlands School bonus payments

Originally we were not expecting to make bonus payments to the school until about Year 10, but our finances enabled us to make an early school bonus payment in 2018. We do not propose another bonus payment in 2018-19, but we will keep it under review each year.

HKD Energy Limited

A Community Benefit Society registered with the Financial Conduct Authority no. 7021

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www.hkdenergy.org.uk