

Directors Report 2017/2018

At the start of the year we are pleased to announce that the Energise Barnsley model was a case study and key recommendation to BEIS (Department for Business, Energy and Industrial Strategy) by the Centre for Sustainable Energy report on **'Bringing local energy benefits to deprived communities'**, commissioned by the Barrow Cadbury Trust. Our directors have spoken at two national conferences this year organized by the Energy Networks Association, on our solar and storage project, and the innovation projects we have led, towards our vision of a decentralized local low carbon energy system.

The last twelve months have included a long hot summer, preceded by the 'beast from the east.' The high irradiance levels and hot temperatures during the summer months resulted in good performance from our commercial portfolio (schools, sheltered housing blocks) as the systems have been fitted with 'Solaredge optimizers', a DC/DC converter connected to each panel, turning them into 'smart panels,' whilst our residential installs had a slight underperformance due to a number of factors covered in the 'Performance Report' below. The portfolio overall has outperformed expectations, and the Directors recommend paying 5% bond interest.

Our residents have now collectively saved over £110,000 in electricity bill savings since the solar panels were installed, and over 1,200 tonnes of CO2 emissions have been reduced.

Our social impact report from the community fund will be published later this year. It is a pleasure to welcome 'Gateway Church' to our AGM, one of community fund grantees, to hear about their successful 'Healthy Cook & Eat' classes for residents on low incomes. Energise Barnsley also prepared a draft paper for AGE UK Barnsley and Citizens Advice Bureau Barnsley, in addition to grant funding, towards a joint pilot project on tackling excess winter deaths in Worsbrough, Barnsley.

Our innovation projects included the standalone 7MW battery, which was due to go into planning just after Easter. The income streams associated with optimising a battery like this for grid services collapsed, which in turn delayed the planning application. Over the last six months battery prices have continued to fall, and we are optimistic that the battery will go into planning shortly.

Our residential solar and battery storage project is into its' second year at Oxspring, with tenants saving an additional £50 - £60 per annum, on top of their reduced electricity savings from the solar PV. Some of these tenants have seen a 60% reduction in electricity bills through solar, battery and switching energy suppliers. We are continuing to work with the project partners, Northern Powergrid, Moixa and Element Energy towards the wider goals for the local energy network.

At our last AGM we expressed a desire to 'socialise the benefits' of our exported energy from our systems to those residents who could not have solar installed. Across all our systems we have calculated that an estimated 800MWh's of electricity is exported to the grid, only receiving a low tariff for the export, or none at all. We took the concept of a peer-to-peer trading system through the Ofgem Sandbox initiative. The results from the initiative are on our website, with current legislation preventing Energise Barnsley from executing a peer-to-peer platform for these purposes, unless partnered with a sole supplier. Energise Barnsley has subsequently fed into the Council's proposal to become a 'white label' energy supplier.

Our third innovation project saw Energise Barnsley led a collaboration of academic and commercial partners, successfully applying to and delivering a feasibility report for the BEIS

Competition for Domestic Demand Side Response. In the feasibility study we fitted a Sonnen smart battery to a code 4 sustainable Bernselai Home, which already had solar PV and a dual-purpose air source heat pump. If the government 2030 targets for the electrification of heat are to be met, then more air source heat pumps will be required to be installed. The heat pumps peak demand (cold winter evenings) is exactly when the national grid is at peak demand. The purpose of the feasibility study was to show that we could shift the air source heat pump demand, and shift 'solar peaking' as well, with a view to scaling operations nationally, to provide a domestic commercial demand side response model. If selected by BEIS, we will complete Phase 2 of the competition over the next two years.

I am continuing to represent Community Energy England, and Energise Barnsley on the Energy Networks Association steering group for decentralised energy, and pleased to report that Energise Barnsley is an award finalist in the 'Collaboration Award' by Community Energy England, and an award finalist for 'Environmental Social Enterprise' of the Year by Social Enterprise.

With best wishes,

A handwritten signature in black ink, appearing to read "A Heald".

Andy Heald
Director

Solar Performance and O&M Report **(Period: 01 Aug 2017 to 31 July 2018)**

Residential – Generation (kWh's and O&M)

The generation performance of the residential portfolio was 2% lower compared to the previous 12 months. Three main factors contributed to this:

- For the period spanning March and April 2018, heavy snowfall reduced sunlight intensity to around 39% of its normal level for this time of year.
- Although our 2018 summer was hot and dry, it also brought unusually high (+30°C) daytime temperatures, which can suppress electricity output from photovoltaic panels. Unlike the commercial portfolio, the residential systems do not have voltage optimisers and are susceptible to high temperatures. Generation in July (usually one of the highest performing months) was significantly below trend
- We had an increase in the number of O&M issues in May and June. This included a number of systems dropping offline, an inverter failure (subsequently replaced under warranty) and one instance of a system which was temporarily switched off so that it could be repositioned on the roof.

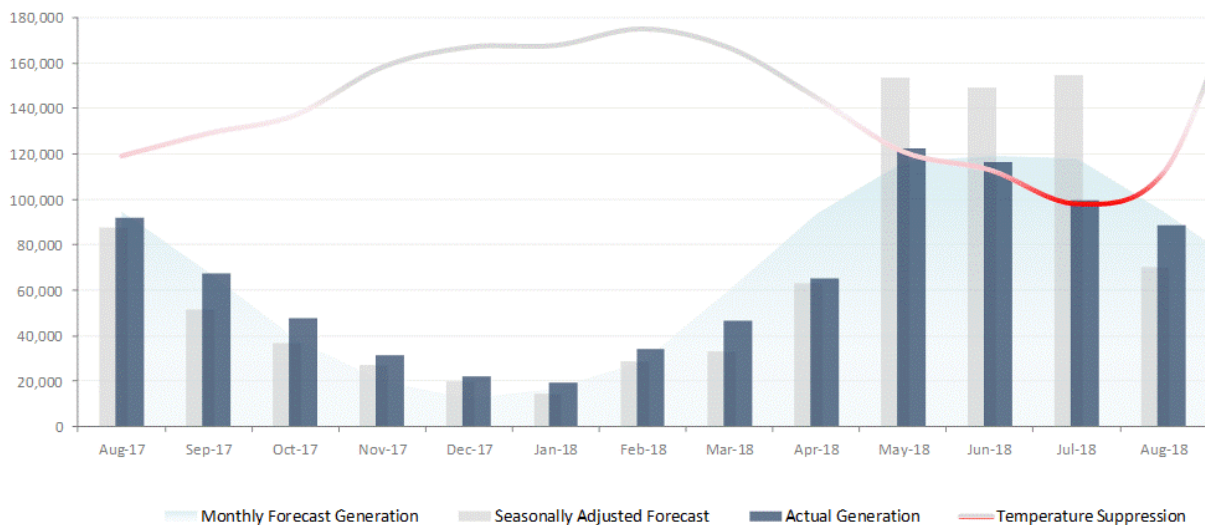
The repositioned array is now optimised for sunlight exposure and this should recover around 610 kWhs per annum, approximate 22% increase in yearly generation from that system.

The number of O&M issues has now been brought back within normal levels. We currently have 4 offline systems.

Residential – Revenue

Despite the slight fall in generation levels, revenue from the electricity rose by 1.32% relative to the previous 12 months. This is primarily due to the feed in tariff indexation of 4.1%, which took effect from April 2018 – meaning that the income per unit of electricity generated was higher the previous year.

Residential – Summary Table					
Generation (kWhs)			Revenue (£) net of VAT		
Aug16-July17	781,166	-2.04%	Aug16-July17	109,896	+1.32%
Aug17-July18	765,266		Aug17-July18	111,345	



Commercial

A true year on year comparison of the August-17 to July-18 period is not possible for the commercial systems because installations were only completed in October 2016. It is possible however to evaluate performance by comparing the October17 to July 18 segment with its previous year equivalent. Generation performance for this period rose by 2.68% vs the previous year and 7.7% relative to forecast levels.

This positive result comes despite heavy snowfall during March and April which reduced generation at the start of the calendar year. These early setbacks seem to have been more than offset by favourable 2018 summer conditions. Although daytime temperatures exceeded 30°C, this did not significantly impair electricity generation because the commercial systems are fitted with voltage optimisers which help mitigate the effects of temperature suppression.

O&M issues have been kept to a minimum this year which has enabled the portfolio to make the most of good weather conditions. There has been localised underperformance on one of the sites – however this has been notified to the O&M team at Centrica who are taking action to resolve the underperformance.

The export meters have not been fitted to those sites where it makes financial sense to install them. When the meters are fitted there should be a revenue increase to the portfolio. The reason for the delay is surrounding the complexity of current metering and supplier arrangements at the given sites. We will continue to work to find a solution. At least 2 of the commercial systems appear to be sensible economic prospects for an Export meter.

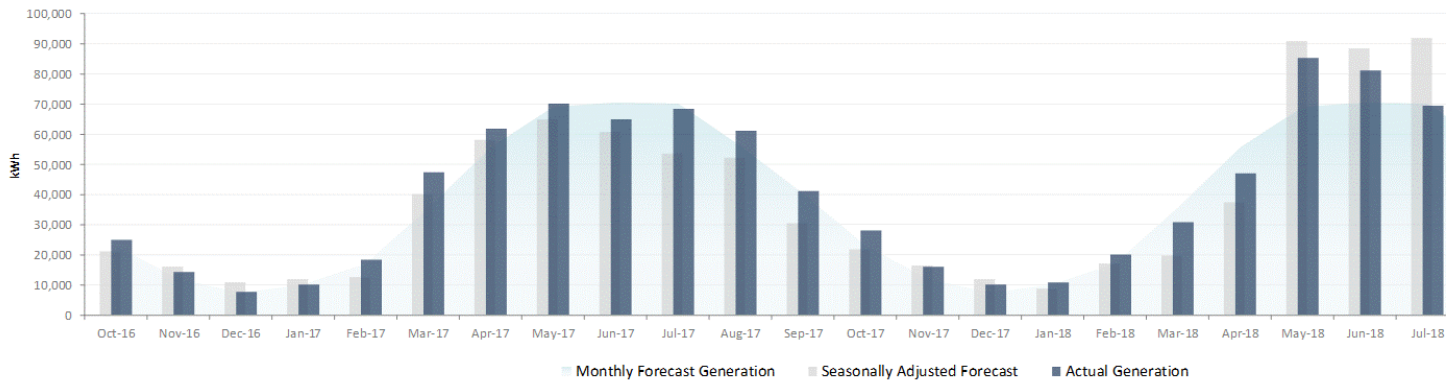
Commercial – Revenue

FIT Revenue from the commercial systems was 6.51% above the equivalent period last year. This lift reflects a combination of favourable summer conditions and a 4.1% rise in the feed in tariff indexation.

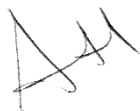
PPA (power purchase agreement) revenue from the latest billing period (01 December 17 to 20 July 2018) came in at £13,108, 26% above the level forecast for that period in the portfolio model. This is partly due to 4.1% indexation of the PPA tariffs in the post April period, but also due to the fact that higher generation made more electricity available for on-site consumption.

Commercial – Summary Table					
Generation (kWhs)			Revenue (£) net of VAT		
Oct16-July17	387,819	+2.68%	Oct16-July17	42,479	+6.51%
Oct17-July18	398,197		Oct17-July18	45,244	

PPA Revenue (£)		
Modelled Level	10,342	+2.68%
Dec17-July18	13,108	



Signed 01 October 2018



Andy Heald
Director
On behalf of Society Directors