Energise Barnsley leading the way on community energy

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Energise Barnsley is the largest local authority and community energy solar PV and battery storage project in the UK.

The scheme, set up with Barnsley Metropolitan Borough Council, includes six interconnected segments which aim to achieve low-carbon solutions owned by the community.

The six project segments include:

- solar photovoltaic (PV)
- battery storage
- demand-side response (DSR)
- peer-to-peer (P2P) trading
- asset management, and
- community funding.

321 Barnsley council homes have been recipients of solar PV installations since the project got underway in late 2014. Of these installations, more than 75% of homes were bungalows inhabited by elderly individuals, with 25% of all residents on pre-payment meters. Sixteen non-domestic properties such as schools and community buildings are also taking part.

Households are equipped with solar electricity monitors to display when solar panels are generating electricity, and so when the greatest largest savings can be made. Over £40,000 of savings were made on electricity bills within the project's first year, with more than 800MWh of low-carbon electricity generated during this time.

Battery storage is another feature of Energise Barnsley, funded by Northern Powergrid. The battery storage, provided by Moixa, aims to give homeowners more control over their generated energy, and a way to make greater savings on electricity bills.

Not only are battery installations beneficial to the consumer, but also to Northern Powergrid which is conducting research to measure the mitigation needed for reinforcements to the electricity network for solar PV households with and without battery storage. If a solar PV and battery combination is found to be beneficial to the grid, large-scale cost reductions could be made off the back of the small-scale community venture.

The scheme is also looking to install smart battery technolgy and a control system in households with dual-purpose air source heat pump installations, to allow for clearer analysis of DSR. Heat pumps are efficient installations, but require greater electricity consumption. This has been shown to coincide with peak demand of the National Grid, most visible on cold winter days between 7-9am and 2:30-7:30pm. Battery installations could help to shift peak demand levels, easing pressure on the grid and lowering energy costs for consumers.

In some cases, however, Energise Barnsley is trialling the absence of battery installations with the use of a P2P trading platform, to allow for export of surplus energy, also known as 'export spills', at an agreed discount to market rates to those tenants without suitable roofs for solar PV installation. The aim of this is to create greater benefit to both generating households and households in receipt of export spills, which would be able to sell and purchase at more favourable rates than if the energy was exported to the grid.

To ensure that the project delivers its full value over 25 years, Energise Barnsley highlights asset management as a key consideration. Weekly, monthly and yearly performance of the assets is measured against statistical benchmarks to monitor whether actual production matches projected generation.

Better management of the assets allows for more value to be extracted from generation. This will, in turn, benefit the scheme's community fund, which receives all surplus profits. The community fund has been designed to serve the authority region of Barnsley in further deploying low-carbon technology, and assisting in tackling fuel poverty.

The results from this network-centric project are sure to be insightful to any local authority looking to adopt a community-focused energy strategy across a range of suppliers. The sharing of spills is an interesting feature.

Energise Barnsley