

Energise Barnsley

Barnsley Metropolitan Borough Council

Thursday 10 December 2020

Summary

Energise Barnsley is a community-owned energy company working across the Barnsley area. Working closely with Barnsley Council, it aims to achieve low-carbon solutions owned by the community via six key methods. These are: solar photovoltaic (PV), battery storage, demand-side response (DSR), peer-to-peer (P2P) trading, asset management and community funding.

Our problem

Barnsley is an area that was once heavily reliant on coal mining; it's now transitioning to a more modern, greener economy. Just under [10% of households](#) live in fuel poverty in the town and as local council budgets are cash-strapped, we thought this would be a good opportunity to address some of our energy usage in council-owned homes and corporate buildings. By using solar panels and other green technology, we can help to cut energy bills while improving the quality of life for our residents.

Overview

Energise Barnsley is a local authority-backed rooftop solar PV and battery storage community project; it's the largest of its kind in the UK by the number of roofs the solar project has been installed on. There are two sides to this project: the installation of energy-saving gadgets and a community bond.

As part of a Barnsley Council's five-year plan to alleviate fuel poverty, 321 council homes have had solar PVs installed since the project got underway in late 2014. Of these homes, more than 75% were bungalows inhabited by elderly residents with 25% of all residents on prepayment meters. 16 non-domestic properties such as schools and community buildings have also taken part in the project. In the first year, tenants have saved over £40,000 in reduced electricity bills, with the systems generating over 800 MWhs of electricity, and over 400 tonnes of reduced carbon emissions. This project is a key part of *BMBC Net Zero 45* - the borough's commitment to being [Net Zero by 2045](#), and as such, has contributed over 3,000 tonnes of reduced CO2 emissions to date.

The scheme is also installing smart battery technology and a control system in households with 600 dual-purpose air source heat pump installations. That system will allow for a clearer analysis of demand, which means that residents will enjoy green, effective heating when they need it and any residual energy can be stored for times when the Grid is at capacity.

The second part of the project - the Barnsley Solar Bond - is a way of encouraging investment into this green transition. Back in 2016, the bond raised £800,000 in investment in under three months. This five-year bond

allows people to invest for a fair financial return while making a meaningful social and environmental impact in the area. It has paid interest rates of 5% per annum for the past four years and is on target to pay 5% in its final year. The minimum investment is £100. The community solar fund has funded numerous social enterprises with diversified local social impact, with benefits to bondholders including financial resilience and playing a key role in the funding of various community and charity projects.

This is a six-pronged project that seeks to:

- Reduce levels of fuel poverty
- Help support the most vulnerable in our community
- Develop our community's resilience
- Reduce carbon emissions
- Educate residents on energy saving and low carbon tech
- Demonstrate how communities can work with local authorities to deliver long-term sustainable infrastructure

As an idea of how Energise Barnsley is tackling several of those aims all at once, we chose to implement our solar and battery storage project in 40 single bungalow homes with retirees living in fuel poverty. For this particular two year project, we installed landlines and broadband in addition to the batteries. These tenants have electricity bills which are approximately at least 75% lower (in relative terms) compared to pre-solar and pre-battery.

In 2018, the project won the Collaboration Award sponsored by [Power to Change](#) (an independent charity that supports community businesses) for the most commendable collaboration between the community, commercial, public and third sector partners.

Timeline / project progress

The initial solar installations have been completed and already have an excellent five-year social, environmental and financial record (as set out in our annual [Directors' Reports](#)). It's proved to be the ideal springboard to work with a collaboration of commercial, academic and government partners in a series of innovation and social impact projects. One recent partnership involved us working on the [BEIS Domestic Demand Side Response Project](#) alongside Oxford Brookes University, Passiv, Sonnen and Northern Powergrid. If approved, we hope to be part of a 2021 collaboration between Smart Solar in Barnsley and AgeUK Barnsley

Stakeholders

Barnsley Council is the custodian trustee. That means that Council is not involved in the day-to-day running of the society (although there are board members from the Council), but has an interest in its activities given that the society's assets are on Council property.

Other stakeholders include:

- Berneslai Homes (who manage the residential homes)
- The local community represented on the Energise Barnsley Community Benefit Society board (four out of the six board members are local residents)
- Generation Community Ventures (community developer and asset manager)
- Charity Bank (an ethical lender who provided some of the finance for the project via a long term loan)
- Centrica/British Gas Solar (the contractor for the solar PV installations)
- Northern Powergrid (local distribution network owner)
- Ignite (the Social Impact Fund who underwrote the £2m community bond)
- Moixa (battery installer)

The project costs of £2 million were raised through the community bond of £800,000 and a £1.2 million loan from ethical lender Charity Bank. The full cost of the storage solutions was funded by local DNO Northern Powergrid, with the total cost coming to around £250,000 to cover the two-year lifetime costs of the hardware. Ignite underwriting has been repaid from the proceeds of the offer. There was no grant money to generate the project initially, with all parties working at risk. At the time of the launch, the project was valued around £20 million, but a

review of feed-in-tariffs (FIT) meant that it had to be dramatically scaled back. The project will be paying back investors from its FIT income.

Whole systems approach

In 2019, the Department for Business, Energy and Industrial Strategy (BEIS) announced at The Future Build Conference that Energise Barnsley had been chosen as one of 13 collaboration groups to share £8.57million. The BEIS award has allowed Energise Barnsley to fit a further 49 smart batteries in homes with air source heat pumps. The project can also help to [design smart tariffs](#) to reduce tenant electricity bills by providing data (e.g. time of use tariffs for our demand-side response tenants). Energise Barnsley went through to the final of the [Ofgem Sandbox](#) (a regulatory service aimed at renewable energy innovators) application process but didn't proceed as current energy policies were too prohibitive.

The Energise Barnsley project has helped the borough cut 3,000 tonnes of carbon already, with a predicted saving of 18,000 tonnes of CO2 over the project lifetime. Over 50% of Energise Barnsley staff cycle to work too! The total amount of solar PV installed is just over 1.5MWs. As the council's Net45 target is for the whole of the borough, this project is a small contribution in actual numbers but a large contribution in the right direction. Indeed, Barnsley Council is currently in final discussions with Energise Barnsley for a much larger domestic, innovative post-subsidy project at the moment.

The project has a wide outreach that goes beyond economics. In 2018, the bond fund supported two local charities who provided energy advice clinics and support to help people to live well in the winter months. The fund also helped Gateway Church in Barnsley to run healthy cooking courses for those on a low income, helping residents to budget and eat well. They also installed LED lights at Dearne Playhouse helping them to save money on their electricity bills.

Impact

This project has had a significant financial and social impact.

In the trial, participants saw energy bills fall around 30% as a result of solar panels being installed, and a further 20% as a result of the battery units. Over £40,000 of savings were made on electricity bills in the project's first year alone (2014-15), with 800MWh of low-carbon electricity generated during this time.

In addition to the tenants' electricity savings, a large proportion (over 40%) of the community bond members are from the Yorkshire region, and the first distribution of the community fund (£20,000 in year one) has taken place. The bond has provided 5% returns for investors, with over £400,000 being paid from all surplus income generated into the fund.

To date, Energise Barnsley has saved residents over £200,000 in reduced electricity bills and over 3,000 tonnes of carbon emissions. To ensure that this project has maximum impact, it's being operated in conjunction with the Council's existing fuel poverty schemes.

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A big barrier to getting this project up and running was the cut to Feed in Tariff (FiT) subsidies. Energise Barnsley launched on the very same day that the government announced a review of the FiT scheme, which awarded a guaranteed unit price for electricity generated and exported from renewable energy generators. The scheme was stopped on 31 March 2019 to new installations, which meant that a significant portion of the income which was envisaged would be generated by the project was no longer available. The FiT cuts rendered future installations uneconomical; it was only thanks to the underwriting from Ignite that we were able to continue with the project. Mercifully, 321 homes had been installed before the changes to the tariffs were brought into force. We've taken additional measures to ensure that tenants are able to maximise their consumption of solar power. The 20-year subsidy permits bank debt (our ethical lender) to support the project on favourable terms.

In the future, we plan to work with other technologies and project structures to meet the changing levels of subsidies available. This fundamentally should not stop the growth of Energise Barnsley as technologies develop and costs continue to decrease.