

Next Generation case study: Bath and West Community Energy – Flex Community December 2020



About BWCE Community Energy:

Bath and West Community Energy (BWCE) is a not-for-profit community benefit society, owned and run by its members for the benefit of the community. Its vision is for a local area able to supply decreasing local energy demand with increasing generation from renewable energy, driven by collective action and community ownership. Its focus has been on developing clean local energy, community-owned for the common good.

The Flex Community project is designed to test and pilot the Stemy Energy cloud-based platform with 50 households providing electricity flexibility by enabling demand-side response through the automatic control of major electric-powered technologies, such as EV charge posts and heat pumps, within householder-defined comfort constraints. The project is working with Western Power Distribution to simulate real-time flexibility requests and so test the platform and householder response and validate the business model for scaling and replication.

It is free to join the Flex Community, but households are required to commit to the installation of appropriate flex-enabled technology plus specific Stemy Energy monitoring equipment. They also need to agree to the automatic control of their energy technology's electricity consumption, but within pre-agreed comfort levels. Initially the project is focusing on the installation of hot water controllers, heat pumps and household EV charging points, as well as looking to engage with households with existing PV or battery technologies.

Participants will receive an annual flexibility payment, but once the platform can actively trade aggregated electricity within grid constrained areas the participating households will receive direct flexibility revenue from the network operator.

Overview of the project:

This is a complex and ambitious project bringing together a number of actors (BWCE, Stemy Energy, equipment manufacturers and installers and the electricity distributors) and a range of technologies, including a novel software platform. BWCE are seeking to establish a Flex Community, where customers sign up for a flexibility service - not just to procure energy efficient technology or to make cost savings.

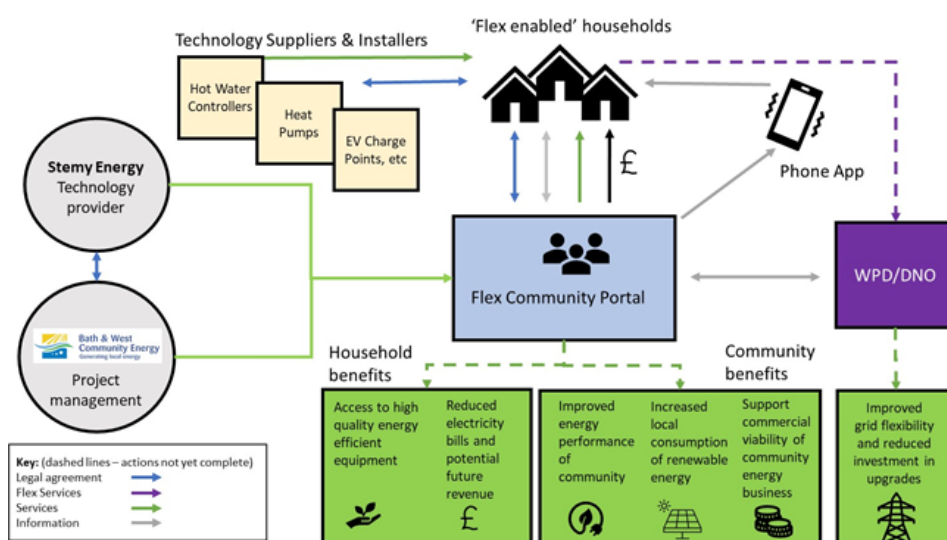
The key points of the overall business model are:

- BWCE is acting as project manager to bring all the components together and to facilitate the Flex Community.
- BWCE has the direct relationship with the individual households, being responsible for their recruitment to the Flex Community.
- BWCE is working directly with Stemy Energy who is developing a bespoke software platform and on-line portal to enable the establishment of the Flex Community.
- The Flex Community Ecosystem provides recommendations for appropriate 'flex-enabled' technology providers with which the individuals can engage and procure equipment for their households. The householder engages with the technology supplier for the purchase, installation and servicing of that equipment. BWCE is not involved beyond pre-qualifying suppliers for the Community.
- Participating householders will also be required to install some discreet Stemy Smart Equipment.

- The collated data from these simulation exercises will be used to inform and refine BWCE's community aggregator business model. Sensitivity analyses will be undertaken to test variance on data points and the opportunity for scalability and replicability.
- Once flex-enabled technologies and Stemy Smart Equipment has been installed, the flex offering will be simulated internally with Stemy's platform, and externally, with WPD's platform.

Key points for Community Energy groups:

- The credibility and reputation of BWCE is an important part of the value proposition and needs to be maintained if the Flex Community is to be scaled and replicated.
- Ensuring that the optimum candidates are recruited for the first stage of piloting is critical, with a high degree of 'hand holding' to address any issues/concerns and to manage expectations. This has resulted in the project management being more onerous than planned but may be a key aspect of future competitive advantage - it is unlikely that commercial players will be able to provide this level of customer service.
- Significant knowledge has been gained in negotiating with the equipment manufacturers and the installers. The barriers encountered had not been anticipated but going forward BWCE is much better placed to negotiate more effectively.
- The relationship with Stemy Energy is strong and they work well with BWCE; there is good compatibility in terms of their relative strengths. The two organisations have a joint vision, and the relationship has opened other opportunities to leverage and further develop the Flex Community.



Our learning so far:

Development of the software platform

It has taken longer than anticipated for Stemy to develop and build the software platform and portal, specifically to ensure it has the required functionality. It is important that this was resolved as the Portal is now 'live'. Householders are invited at each step of the way to provide feedback to inform our learning to help ensure the best possible user experience.

Engagement with equipment suppliers

Liaison with potential 'flex-enabled' equipment manufacturers has been more challenging than anticipated and has led to some delays. It has taken time to identify those suppliers with appropriate technology, and then there have been commercial sensitivities about sharing the required API¹ code that will allow the equipment to 'talk' to the Flex Community Platform.

This has resulted in the need to sign non-disclosure agreements (NDAs - which in some instances has taken a long time to get approved by the manufacturer), and then negotiate a license agreement with Stemy Energy. Selection of the right technology and suppliers is important for the success of the business model; not only do they need to be compatible with the portal, but they also need to be credible and reliable suppliers.

Recruitment of households

Recruitment of households per se has not been a problem, but there have been some issues in their participation in the Flex Community:

- Not all households that express interest in the scheme are appropriate for the community. For example, if they do not have a strong enough internet connection (even if boosters are installed) or if their property is not suitable for the flex-enabled technologies. In addition, some householders have withdrawn for a variety of personal reasons i.e. have moved home.
- The advent of Covid-19 has meant that access to householders' properties to install equipment has been significantly restricted and it has also reduced engagement from potential new householders.

What we're doing next:

To date, 16 households are actively participating in the Flex Community and are offering flexibility for simulation. BWCE has also actively recruited over 40 interested parties to commence their Customer Journey through the Portal to see if they are eligible to join the Flex Community.

Development of the business model is starting and once complete will allow the team to understand and define the financial viability of a community benefit society to act as a community aggregator, and the potential to scale and replicate the model for other community groups.

If you want to know more:

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¹ An application programming interface (API) is a computing interface that defines interactions between multiple software applications.