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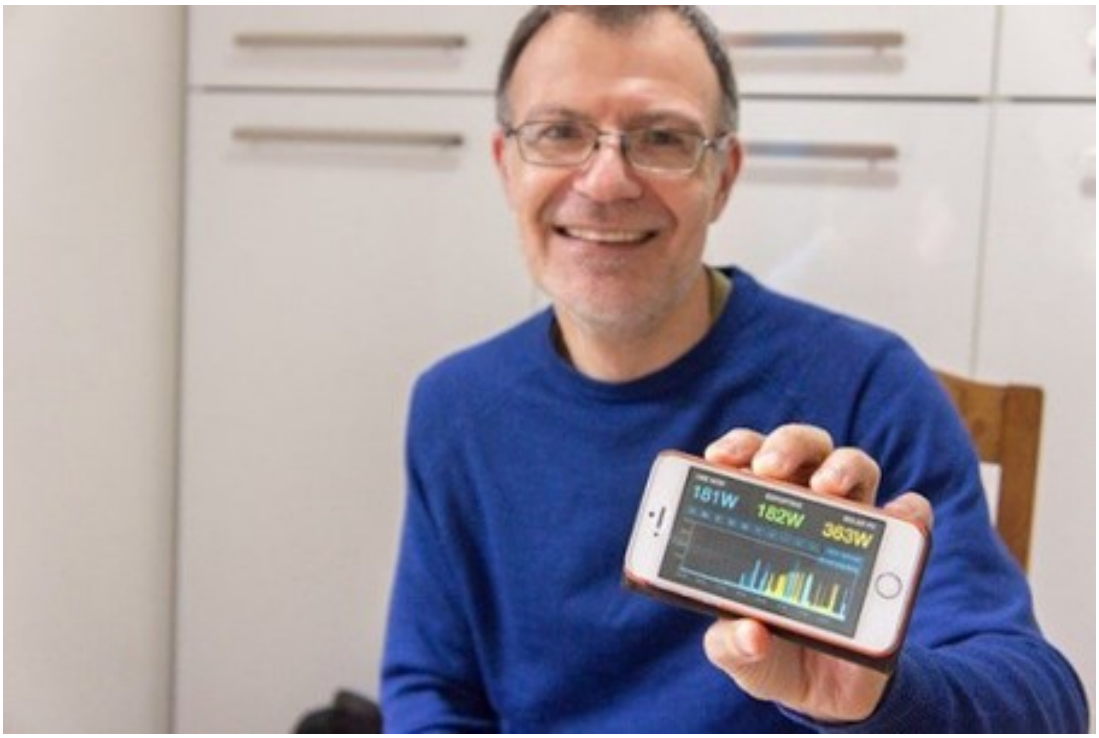
Next Generation case study: Carbon Co-op – Energy Data Co-operative
December 2020



About Carbon Co-op:

Carbon Co-op is an energy services and advocacy co-operative that helps people and communities to make the radical reductions in home carbon emissions necessary to avoid runaway climate change.

The Carbon Co-op was founded in 2008 as a response to members concern about the threat of climate change and to enable the development of a collective and pro-active response leading to a large scale reduction in carbon emissions from homes and communities. The co-op currently has 267 members and twenty employees with governance provided by a board of directors made up of both members and staff.

The co-op has had an interest in digital systems since its inception and has developed a suite of digitial tools and services. The support from Next Generation will be used to build on this foundation to enable it to build an Energy Data Co-op.

Carbon Co-op sees a potentially powerful role in the digital energy system for citizen co-operatives: groups of consumers, enabled through digitial technology, to collectively provide and use energy services.

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Key points for Community Energy groups:

- The project aims to create a community energy data co-op for Carbon Co-op's members, but the aim is to create a replicable business model that, through social franchising or some form of federation, will be made available to other groups within the UK.

- The energy co-operative will enable members to interrogate and capture the value of their data through, for example:
    - Enabling co-op members to aggregate and co-ordinate their ability to act as prosumers. For example, by selling flexibility services (to enable balancing of electricity demand).
    - Allowing members to access historic data and assess the impact of new and emerging forms of tariff on their bills.
    - Accessing historic smart meter data enables householder comparison and opens up the ability for the co-op to create aggregated smart export tariff offers when these become available in early 2020.

Overview of the project:

As the energy system becomes more decentralised and more decarbonised, the system faces a number of interconnected challenges. With transport and heat becoming electrified there is an urgent need to reduce domestic energy demand. Simultaneously, the increased use of renewable energy, the supply of which fluctuates and can create imbalances in supply and demand, requires a change in the current patterns of energy use. Underpinning and enabling all these changes is the creation, aggregation, processing, analysis and management of energy data.

To date the collection, manipulation and monetisation of data has been the preserve of the private sector and their activity has been a source of considerable debate about the ethics of data ownership. Carbon Co-op believes that a Community Energy Data Co-operative has the ability to aggregate the large quantities of data necessary to facilitate key service delivery whilst maintaining high levels of consumer trust and capturing the inherent value of the data for community members.

Our vision is 'Carbon Co-op as an Energy Data Co-operative', offering a well-designed package of digital-led services, giving members control and a sense of ownership of their data, and helping similar organisations develop from the fertile ground of the community energy and co-operative movements.

Progress to date

A longlist of software-based energy services, that will form the offer of the Data Co-op, was developed via a stakeholder workshop in May 2020. Each of the services on this longlist was subject to a mini-business modelling exercise to assess viability. Through this exercise a shortlist of four services was identified for further development. To date, two of these have been subject to a fuller business modelling exercise and developed using a Service Design methodology.

Initially work has focused on developing and piloting a smart meter service and an impact tracker service.

1) Smart Meter Service: This service is intended to allow co-op members to use data collected by in-house smart meters to help them make informed choices between different energy tariff offers. Piloting of the service involved 24 members of the co-op. The service is now live and available to all co-op members.

2) Householder Impact Tracking: The impact tracker service allows users to baseline their energy use and subsequently track the impact of technical and behavioural changes on their energy use. So far 20 members of the co-op have been involved in the pilot. It is planned to extend the offer to all members in early 2021.

Two additional service offers have been developed in conceptual form these are: 1) the Home Retrofit Logbook, which will enable home owners to log energy efficiency work, in the same way that a car logbook allows owners to record and share details of a cars service and maintenance history. 2) Home Environment Monitoring and Investigation service – to allow users to collect home environmental data for the benchmarking, troubleshooting, diagnostics and retrofit planning and evaluation.

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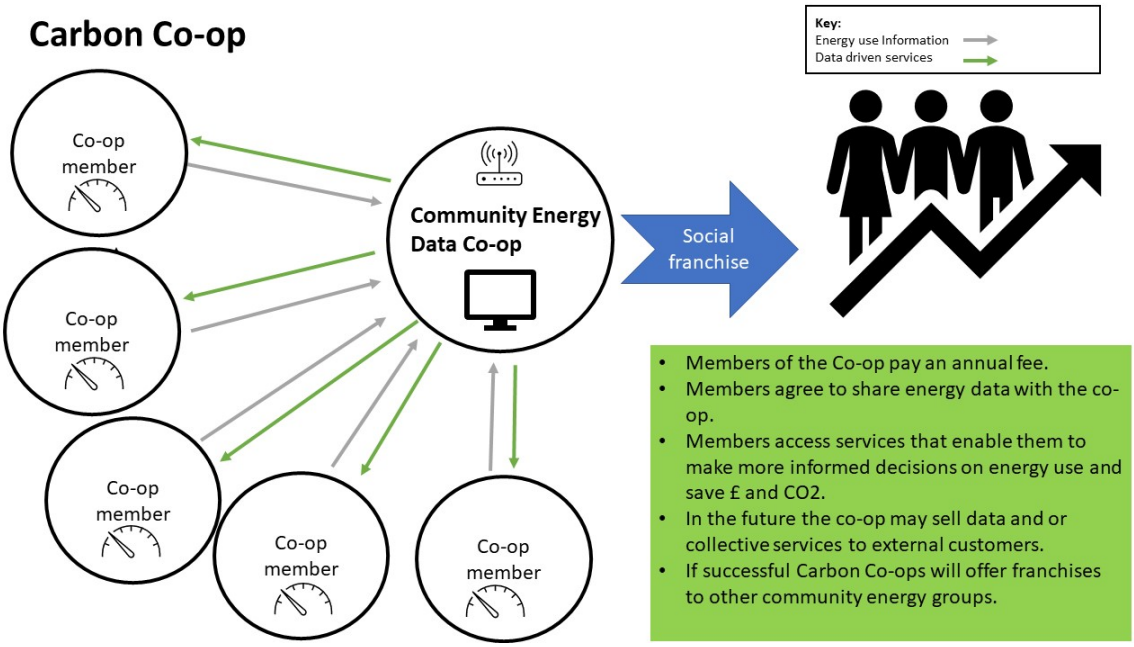

Our learning so far:

An evolving picture

Work to date has involved an iterative cycle of design, testing, feedback and redesign. This has enabled the piloted services to evolve to better fit the needs of potential users. The development process has triggered wider debates within the co-op about how best they might monetise member data and the ethical issues associated with data use. These debates have been informed through engagement with Open Data Manchester and mentoring support has been procured from ThoughtWorks, a global software company.

Carbon Co-op is, at least at present, wary of large scale data aggregation and focused on developing and sharing tools for wider use through social franchising or federation arrangements. Involvement in the pilot has though caused them to reflect on the nature of their relationship with members. Over time, the co-op expects to move away from a standard membership to offer tiered membership with higher rates being charged for higher range of service. They also hope to keep growing co-op membership and thereby to improve the sustainability of the co-op through increasing the income generated from membership; this approach is something relatively new to the coop, but is now being actively considered within the project work packages.

What we're doing next:

The next stages of the project involve iterative user testing and development phases – ensuring members are intimately involved in the creation of new services and that they work for their priorities. Alongside this, an organisational learning exercise is enabling Carbon Co-op staff to reflect on the changes to work practices and organisational structures required to deliver new, data orientated services. Finally, a business planning exercise will examine the sustainability of such services and the potential for replication.

If you want to know more:

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