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COMMUNITY FUND

Evaluation of the Next Generation programme for Community Energy – innovation

EXECUTIVE SUMMARY OF YEAR 2 REPORT

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About this working paper

This working paper summarises findings from Year 2 of CAG Consultants' evaluation of the Next Generation programme. The programme aims to support the community energy sector in two ways:

– by bringing more solar farms into community ownership whilst maximising the financial, environmental and social impact for their local communities (CORE)
– by supporting the development of innovative business models for the community energy that are not dependent on Feed in Tariff subsidies (Innovation).

This paper presents interim evaluation findings about the innovation strand of the Next Generation programme, covering the processes used and interim outcomes/ impacts. It also shares learning from the programme for the benefit of community groups, policy makers and other community energy stakeholders.

About the authors

CAG Consultants is an employee-owned co-operative with more than 30 years' experience of high-quality research and evaluation on economic, social and environmental issues, with particular expertise on evaluation and sustainable energy. Fiveways have broad expertise in advising and evaluating the community and voluntary sector, including governance and diversity issues.

Glossary of abbreviations used in this report

Abbreviation	Description
BEIS	Department of Business, Energy and Industrial Strategy
CAG	CAG Consultants
CB	Community business
CBF	Community benefit fund
CBS	Community benefit society
CE	Community energy
CEB	Community energy business
CEE	Community Energy England
CHG	Clean Heat Grant
CORE	Community Owned Renewable Energy
CSE	Centre for Sustainable Energy
DNO	Distribution Network Operator
ESCO	Energy services company
EV	Electric vehicle
FCA	Financial Conduct Authority
LED	Light emitting diode (low energy lighting)
PV	Solar photovoltaics
RHI	Renewable Heat Incentive
UKRI	UK Research and Innovation

Executive summary

Introduction

This paper summarises key findings from CAG Consultants' 'summative assessment' for the second year of the Next Generation innovation programme, ahead of the programme's closure during 2022. It summarises current progress on process and impact for the programme and also draws out learning to inform future work in the community energy sector by Power to Change and other stakeholders.

Findings about impact

Impact on grantees

The Next Generation programme has enabled Community Energy Businesses (CEBs) to take risks in developing new business models. Many of the Next Generation CEBs are Community Benefit Societies that cannot normally take high levels of risk with funding provided by community shareholders, because of their responsibility to repay capital over time and provide a return to shareholders. The value of innovation funding is that it can allow failure without significant penalty. Next Generation innovation funding has enabled CEBs to innovate, not so much in terms of technology but in terms of their business models and the services they offer. Grantee groups commented favourably on Power to Change's flexibility in allowing changes to the detail and timescale of grant spending. This helped the groups to respond to changes in the evolution of their specific projects and the wider context (including COVID-19).

Innovation funding for CEB activities was not readily accessible from other sources on the scale provided by the Next Generation programme. Most Community Energy (CE) specific funds, such as the Rural Community Energy Fund, were not focused on innovation and provided smaller scale grants. While the Energy Systems Catapult, Innovate UK and the UK Research and Innovation agency (UKRI) do provide innovation funding, few CE groups have the capacity to write successful bids for this funding. Similarly, innovation funds offered by Distribution Network Operators (DNOs) such as the Network Innovation Allowance provide large-scale funding for some energy innovation projects but are primarily designed for engineering-orientated projects and have not hitherto been accessible to many CE groups.

For some of the smaller groups, particularly those in remote locations within England, participation in the Next Generation programme has helped to raise their profile, build their capacity and network more widely. For example, Burneside CE has been able to gain a wider perspective through networking with other Next Generation partners, while Nadder CE was able to take on a part-time project manager who increased their capacity to implement project activities. However, the larger groups involved in the programme already had considerable organisational capacity and were already well-networked, so this benefit was less evident for them.

Impact on people (primarily volunteers, employees)

The innovation programme has built the skills and knowledge of directors and staff within the 11 innovation groups[1], helping them to get to grips with potential new areas of work (e.g. electric vehicle (EV) charge points, LED lighting, heat pumps, flexibility services etc). We found that the programme has done this in five different ways, by:

- Funding time for CEB staff or directors to spend time investigating these areas;
- Funding external expert advice on specific issues;
- Providing a forum for the innovation projects to learn from each other and share expertise on common issues;
- Providing access to support and advice from CSE consortium members;
- Helping some CEBs to structure and clarify their thinking about their projects.

For certain groups, the innovation programme has also provided funding for paid management inputs by part-time consultants, directors or employed staff, with some positive impact reported in terms of the employability of these individuals.

1 The groups were: Bath & West Community Energy, Brighton Energy Coop, Burneside CE, Chester CE, Carbon Co-op, CREW Energy, Gloucestershire CE, Green Fox CE, Lockleaze Loves Solar, Nadder CE and Plymouth Energy Community.

Impact on place (including users and their communities)

Most of the new business models explored through the Next Generation programme aim to deliver community benefit directly (e.g. through low carbon heat or transport interventions) but they currently appear likely to generate less surplus for CEBs than earlier business models, where subsidised renewable energy investment generated significant surplus funds that CEBs could reinvest or distribute for community benefit.

The innovation programme's impact on users and their communities has been very limited so far, as might be expected for an innovation programme which primarily aims to trial new approaches rather than create local impact. Impact on local communities has also been constrained by:

- The time it has taken to develop financially viable business models;
- The challenges of operating in the context of the COVID-19 pandemic; and
- The fact that most of the business models are still marginal.

There has also been tension between the objective of progressing innovative, risky work on marginal business models and the objective of generating social benefits for local communities, including disadvantaged and vulnerable people. For example, Bath &West CE found that it was not appropriate to include fuel poor or vulnerable individuals in their 'Flex Community' trials because of the (small) risk of equipment failing, leaving people without heating or hot water.

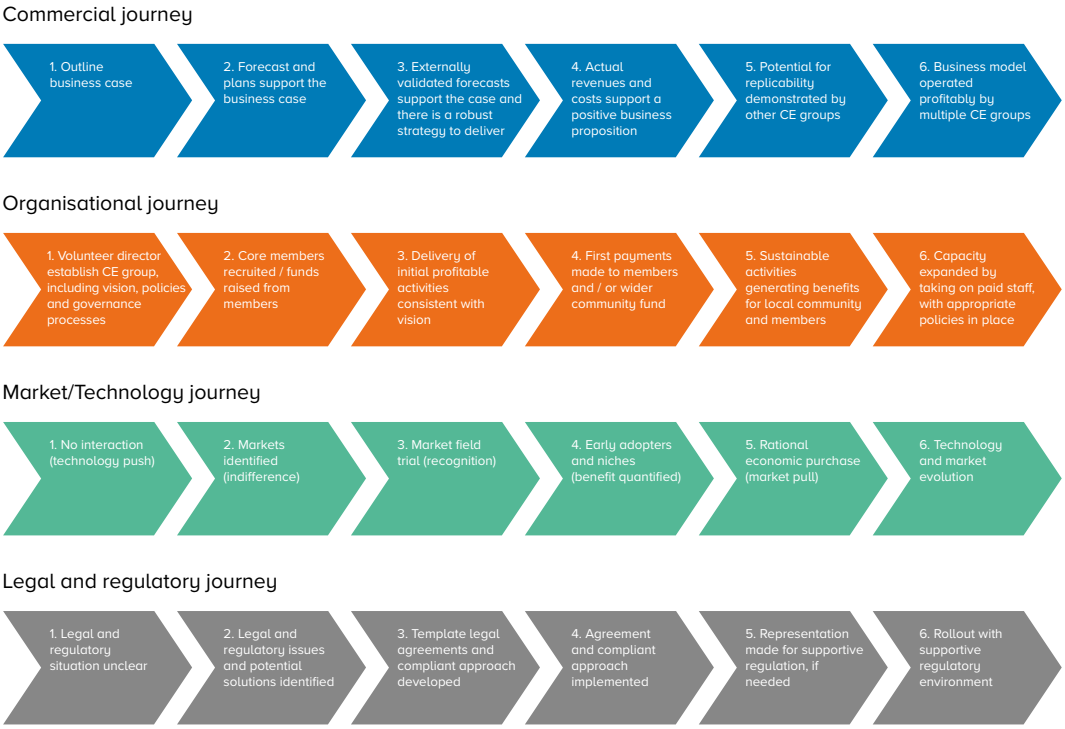
However, there are some emerging examples of projects pursuing both innovation and social benefit objectives, generally led by groups that work particularly closely with their local community. For example, the EV car club being developed by Nadder CE brings social benefits to users, such as increased mobility and lower transport costs. The viability of this model is described further below.

Impact on marketplace

The innovative business models supported by the Next Generation programme involve more complexity and risk than earlier CEB investments in subsidised renewable energy. Significant regulatory and policy barriers remain for the new business models.

We have used an 'innovation journeys' model (adapted from the Carbon Trust's 'four journeys' model, as shown below) to assess the progress made on emerging business models. When assessed against the 'commercial journey' model, the most advanced business models in the Next Generation programme have reached stage 4 ('actual revenues and costs support a positive business proposition') but most are at stage 2 ('forecasts and plans support the business case') or stage 3 ('externally validated forecasts support the business case and there is a robust strategy to deliver').

Figure 1: Innovation journeys model for CE groups[2]



None of the projects has yet reached stage 5 ('potential for replicability demonstrated'). While an innovation programme is about taking risks, and some project failures would be expected, this means that the Next Generation innovation programme has not yet fulfilled its overall objective of developing some replicable, financially viable post-subsidy business models for CE. Some of the business models may yet bear fruit, but further work is needed to resolve uncertainties in the business models and assess their viability in more detail, as summarised in the table below.

While there are as yet no clear 'winners' within the Next Generation innovation programme, CE groups in the programme have reported that there are other non-subsidy models outside the programme that may offer viable opportunities for CEBs. Learning about these opportunities is also summarised in the table below.

The innovation programme has generated and shared a considerable amount of learning about the successes and failures of different business models. To date, this learning has primarily been shared between CE groups and within the CE sector, but this summary aims to share these lessons more widely with policy makers and external stakeholders (e.g. DNOs, local authorities, other funders and institutional investors). The aim is to help these audiences understand the benefits that new CE models can potentially generate and how emerging models could be further enabled and supported in future.

2 Adapted from the Carbon Trust's 'four journeys' model (2009).

Key learning points

Learning about success factors

The innovation projects that made most progress tended to show at least some of the following success factors:

- Organisational capacity (e.g. at least one part-time paid member of staff)
- Ambition and drive (on the part of the project lead and/or their wider team)
- Pro-active project management, learning from and adapting to challenges
- Appropriate knowledge and skills (particularly the project lead)
- A clearly defined project with clear objectives
- Less complex business models with fewer partners involved
- Good partner relationships, built up over time
- No conflicts of interest, enabling partners to develop trust in the project
- Well-networked organisation within the CE sector
- Local organisation, strongly embedded in their local community.

A further success factor was luck. Some of the projects ran into problems because of external issues outside their control (e.g. a key partner going out of business or deciding not to proceed; an important regulatory issue being unresolved; or a subsidy scheme ending).

The Next Generation programme included two groups (Chester CE and Gloucestershire CE) that are run on a fully voluntary basis. The time inputs and skills contributed by their volunteer directors were considerable. But it is understandable that these groups progressed their projects more slowly than some of the 'professional' CE groups within the Next Generation programme.

Learning about the viability of specific business models

There are a number of emerging business models that are potentially viable for CE groups, both within and beyond the Next Generation programme, but many require further support to achieve viability. We have made a preliminary assessment of the current viability of the business models examined by the innovation programme using evidence from the evaluation as a whole. This is presented in Table 1 below, as a starting point for discussion with the wider CE sector and stakeholders concerned with the sector. This table includes potentially viable models outside the innovation programme, on the grounds that the context has changed (e.g. solar PV costs have come down and climate issues now have a higher public profile) and that there may now be some relatively simple, viable business models for CE groups that were not included within the innovation programme.

Table 1: Overall assessment of CE business models

Key: Red = not a priority unless context changes; Amber = some uncertainties and limitations but worth investigating further; Green = at least some aspects are ready for replication, while others may require further work.

Model / projects	Next Gen?	Rationale	RAG rating
Mid-scale renewable generation for self-use or private wire	No	Carbon benefits can be realised by installing subsidy-free PV on commercial-scale roofs above 50-100 kW. This is viable for CE groups because of reductions in solar installation costs in recent years, although groups may find it challenging to secure suitable sites.	
Large-scale renewable generation	No	If suitable large sites can be accessed, for example with assistance from local authorities or other public bodies, CE groups can potentially develop or invest in very large-scale solar or wind power (e.g. 20-30 MW) which is financially viable without subsidy.	
Energy data co-op	Yes	Carbon Co-op aim to roll out one of their software tools to other organisations using a social franchise model. The 'Powershaper monitor' is a low value but viable product that CE groups can use or promote.	
Energy efficiency retrofit	No	Many CE groups provide energy efficiency advice and support, often funded by Community Benefit Funds, surplus from other CE activities, or external funding from local authorities, health trusts or energy companies. A potentially self-supporting approach to retrofit for 'able to pay' customers is being developed by some CEBs (e.g. Carbon Co-op), supported by BEIS.	
Flex community	Yes	The business model for Bath &West CE's 'Flex Community' is complex and difficult but worth pursuing further on the grounds that it can enable CE groups to add value to the wider energy system, using their trusted role in the community to test/develop flexibility approaches that may help DNOs to manage grid constraints.	
PV plus EV	Yes	The Brighton Energy Coop business model involves the addition of EV charge points to proposed solar PV installations on the grounds that – in the right locations – this can improve the economics of PV investment.	
EV car clubs	Yes	There is considerable interest in Nadder CE's EV car club model from other CE groups in rural areas. While uncertainty remains about this model, it is possible that viability could be improved by sharing overhead costs between multiple CEBs.	

Model / projects	Next Gen?	Rationale	RAG rating
Non-domestic renewable heat	Yes	Renewable heat initiatives in multiple occupancy buildings, such as those pursued by CREW Energy, have become much more financially challenging since the end of the non-domestic RHI. But there may be a role for CE groups (e.g as 'trusted intermediaries', engaging with the community and communicating the benefits of renewable heat to users), possibly as a paid service for other stakeholders.	
Domestic renewable heat	Yes	Gloucester CE's project, involving installations in individual homes, is premised on domestic RHI payments. This scheme ends in March 2022 but the Government has proposed a successor policy for the domestic scheme (in the form of the 'Boiler Upgrade Scheme') which may support CE future activity in this area.	
Domestic roof-top solar	Yes	While the business model that Lockleaze Loves Solar was striving to develop is not currently feasible, there are some circumstances in which domestic roof-top solar schemes can be financially viable for CE groups. Further details are provided in the full report.	
Community-owned and operated low carbon energy systems in new housing developments	Yes	The experiences of Plymouth Energy Community and Burneside CE indicate that community-owned energy systems for new housing developments are highly challenging in terms of technical options, feasibility and risk management. While some CE groups may be successful in progressing such projects, this is less likely to be within the reach of most CE groups.	
Loan scheme for LED replacement or other energy efficiency work	Yes	'Pay as you save' funding for LED lighting replacement in community buildings – as explored by Chester CE – does not appear to be feasible unless the FCA provides a route for easier accreditation by smaller CE groups.	
Energy Service Companies (ESCOs) for Zero Carbon Schools	Yes	There are various barriers to CEB work with schools, as explored by Green Fox CE, including regulatory issues and competition from commercial ESCOs. While there may still be an advisory role for CE groups, any initiative would need to access public funding, given the scale of investment required to bring schools up to Net Zero standards.	

Further information on each of the business models in the Next Generation programme, and on the rationale for the ratings in this table, are presented in the full Year 2 evaluation report. Fuller learning on each of the Next Generation business models will also be made available to the wider CEB and CB sector through programme outputs including final reports, case studies and templates.

Recommendation: Power to Change should work with other stakeholders to develop a fuller 'viability map' of different business models/approaches, as a guide for CE groups. This could highlight the level and types of technical and organisational capacity required for different models, flagging those that would be more feasible for smaller, less experienced community groups.

Learning about specific barriers for innovative CE business models

Specific barriers to the innovation business models were identified through the evaluation research. These included:

- **End of subsidies for renewable heat via the RHI scheme** – The end of the domestic RHI scheme at end March 2021 and the upcoming end of the non-domestic RHI scheme in March 2022 make renewable heat schemes less financially viable. The Government has recently announced successor policies[3] including the Boiler Upgrade Scheme, previously referred to as the Clean Heat Grant, alongside the Social Housing Decarbonisation Fund and Home Upgrade Fund. But there is still a lack of clarity in the renewable heat market: key issues for CREW Energy are whether funding will be available for multiple properties sharing a common heat pump or for multi-occupancy buildings. Recommendation: Power to Change should work with Community Energy England (CEE) and those CEBs affected to draw these issues to the attention of BEIS.
- **Financial Conduct Authority regulation issues for CE groups setting up credit or loan schemes** – FCA regulation for small community groups is highly cumbersome and there are arguments that a scaled-down version of accreditation is needed. However, Chester CE are currently attempting to obtain 'limited permission' from FCA, with help from a compliance consultancy, which may yet resolve this issue. Recommendation: Power to Change and CEE should press the FCA for resolution of these issues and publicise any resolution reached so that other community businesses can benefit from lessons learnt.
- **Cumbersome approval processes for solar PV on school roofs** – this issue, experienced by multiple CE groups within the innovation programme, is already being progressed with the Department for Education by CEE and may have been partly resolved, with DfE expressing broad support for renewable energy in schools. Recommendation: Power to Change and CEE should liaise with the Department of Education and CEBs to ensure this situation is resolved, and publicise any resolution reached to other community businesses so that they can benefit from lessons learnt.

3 The Government launched its plans for successor policies to the RHI on 18th October 2021 as part of its Net Zero Strategy (see https://www.gov.uk/government/news/plan-to-drive-down-the-cost-of-clean-heat)

- **Restrictions on peer-to-peer trading of electricity** – changes to current regulations could facilitate solar PV installations, if surplus electricity could be sold to neighbouring properties and businesses, as allowed in some other countries. At present, surplus electricity not used onsite has to be sold to a licensed energy supplier at a wholesale price and then bought back by the neighbouring property/business at a retail price. The Local Electricity Bill attempted to tackle this problem but failed to get through Parliament. Recommendation: Power to Change and CEE should continue to work to draw this barrier to the attention of BEIS and Ofgem.
- **Distribution and transmission charges** – Ofgem's targeted charges review will have important implications for CE groups and the viability of their investments (e.g. by affecting the details of electricity pricing in different contexts). Recommendation: Power to Change and CEE should work to ensure that Ofgem considers the implications for CEBs of the targeted charges review.
- **Social value** – some public bodies already use social value as an important criterion in assessing suppliers or applicants. For example, Bristol City Council give 20% weighting to social value in their scoring criteria. There is scope for other energy system decision-making processes to take social value into account (e.g. including social value within applications for grid connections in constraint management zones would help to support CEB generation schemes, where these would generate greater social benefits than commercial schemes). Recommendation: Power to Change and CEE should work with the Energy Network Association, the Distribution Network Operators and Ofgem to explore the scope for social value being taken into account more widely in energy system decision making.

Learning about designing and running a potential future innovation programme

There is still a demand for further support for energy innovations by community groups. In designing a future innovation programme, stakeholders need to be clear about what a future programme (or programmes) intended to do. Development of a high-level Theory of Change could help to refine intentions for future programme(s).

Future support programmes in this area could pursue one or more of four possible future options:

- Further support to progress and clarify the viability of business models that are priorities for further development (marked in amber in the table above);
- Replication support for financially viable models (marked in green in the table above) – e.g. toolkits, support, webinars etc;
- Support for emerging CE groups (and non-CE community groups that want to take action on energy and climate issues) on the simpler, viable models;
- Further innovation support for models that will be important in future but are not yet viable without external funding (e.g. retrofit, flexibility, heat, EVs, PV, heat or electricity storage).

Recommendation: Power to Change and other infrastructure and funding bodies, including BEIS, Ofgem, the DNOs, innovation agencies and charitable funds, should use the learning from the Next Generation programme to inform the design of future innovation support for community groups seeking to take action on energy and climate issues.

Wider learning for Power to Change's work with community businesses

The Next Generation programme highlights the important role that community businesses can play in responding to local needs. For example, Nadder CE's concept of focusing on a transport project emerged from the bottom-up, via a local 'Green Drinks' session. This project has perhaps been more successful than some of the other Next Generation projects, and is generating interest from other CE groups, because it responds to a real local need that is also experienced by many other rural communities.

But it is worth noting that there is a difference between maximising global climate impacts and maximising local impacts within communities. A group such as Brighton Energy Coop generates social community benefit via its community benefit fund and the return it pays to local members, but its strategic priorities for project activity are driven by carbon reduction objectives rather than local priorities.

Key learning points about the role of Community Businesses (CBs) in innovative projects, within and beyond the energy sector, can be summarised as follows:

- **In new and evolving markets**, CBs need to identify niches where they can further their objectives while operating financially viable business models.
- It is often useful to model, test and adjust an **emerging business model** in response to potential changing circumstances, to ensure it is robust.
- **CBs need to be viable as businesses and can learn from mainstream business approaches** (e.g. risk management, business development processes, software development).
- **Smaller CBs** with limited capacity may need external support to keep abreast of the changing funding landscape in their area.
- **Small CB groups** can access additional capacity and skills by collaborating with other local charities or groups (e.g. their local voluntary action council, community council or credit union).
- **Using services provided by a third party** can simplify delivery of a new project and fill any gaps in the expertise of a CB team but this generally pushes up project costs.
- The **core offer** of many CBs to their external partners and stakeholders is their engagement with people in the local community.
- **Engaging the wider community** is important, so that they understand how a project connects with their local area and issues.
- **Treating clients as partners** rather than customers can help to ensure high quality delivery.
- **Credibility and reputation** are important to CBs that are offering services to people within their community, particularly where CBs are involved in providing essential services (e.g. access to heating, hot water or mobility).
- **Share offers** are time-consuming to organise and publicise, so larger share offers are more cost-effective.

- There are limits to the **level of complexity and risk** that CBs structured as Community Benefit Societies (CBS) can take on behalf of their members. This constrains the type of projects that can be funded via community shares.
- **Negotiation of legal agreements** is one of the main challenges for CBs when implementing complex, risky projects. The cost and time delays involved in setting up agreements can be significant.
- **Writing things down** (e.g. in a draft contract or heads of agreement) can help to clarify issues between different stakeholders, to ensure that – at an early stage – they really understand each other's positions.
- **The number of partners** involved in a project affects its complexity and viability, particularly where each partner takes a slice of revenue from the project. Where projects involve a large number of partners, getting to viability may be more challenging. Dependency on partner involvement also increases a project's vulnerability to external factors beyond its control.
- **Keeping partners and stakeholders fully engaged** is important, particularly through long and complex projects.
- In partnerships with local authorities, **the support of senior management** and/or elected members is crucial to progressing a project.
- **Software development projects** require specific project management skills and monitoring arrangements. Rapid 'project development cycles' can be helpful in getting to a 'Minimum Viable Product'.

Recommendation: Power to Change and other stakeholders should note these findings in their future work with community businesses.

Conclusions

The Next Generation innovation programme has generated significant learning about the viability of different business models for CE, despite making less progress than originally anticipated as a result of the COVID-19 pandemic. A number of specific policy and regulatory barriers have been identified which, if tackled, could increase the scope for community groups to contribute to progressing energy projects, thereby helping them to tackle the climate emergency while generating wider social benefits.

While only a small number of business models are currently viable for CE groups without external funding or subsidy (e.g. commercial-scale renewable energy generation), there are a number of other emerging models that could enable community groups to be viable, while helping to tackle wider issues within the energy system. For example, CE groups can potentially act as trusted intermediaries for initiatives that engage community members in helping to provide flexibility of demand within a low carbon electricity grid. Further support is needed, both to encourage replication of viable models and to enable further innovation and development of emerging and future business models for community energy.

Some CE models that are not commercially viable may still be worth replicating if they generate added social value for other stakeholders (e.g. health service providers, DNOs, local authorities), particularly where this value can be translated into payments for the carbon savings, flexibility services, health improvements, community engagement and other 'social value' services that they generate.

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