

ZERO CARBON RUGELEY

WP2-D6.1: Suitable delivery models

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Description	The first section of this report gives background on the current community energy organisation active in Rugeley and ambitions for community energy projects in the future. A summary of the different funding streams and legal/governance structures available for community energy organisations are then outlined. It goes on to advise on the best legal/governance structures and funding streams to look into for each ambition, as well as key considerations, and whether the ambition is possible for Rugeley. The report concludes by giving recommendations for projects to pursue, as well as opportunities to collaborate and advised legal structures.
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Suitable delivery models for community energy organisations

A summary of the different funding streams

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Suitable delivery models

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1 Glossary

Ordinary shares: A share is a legal right to membership and part-ownership of an organisation in return for an investment. Ordinary shares typically means one share, one vote.

Community shares: A way to raise money by offering a community to own shares in the organisation. In community organisations, it is often one member, one vote irrespective of how many community shares you may own.

Community bond: A form of loan with a legal agreement between issuer and purchaser of the bond. The agreement usually includes a specified interest to be paid on the loan and when the loan will be repaid. The main difference between a bond and a typical loan is that the capital is paid back at the end of the bond agreement, rather than throughout the time period like a loan.

Asset lock: An asset lock is where any assets owned by an organisation, including any profits or surpluses must be used for the benefit of the community. If locked assets are transferred out of the organisation, a set of requirements ensuring they are still for community benefit must be met. More information about this can be found [here](#).

Special purpose vehicles (SPV): Subsidiary organisations created by a parent company to perform a specific business purpose. Financial risk is isolated and the assets of each organisation are protected, so if one organisation fails, they do not all fail.

2 Outline of existing Chase Community Solar model

2 Outline of existing models

Chase Community Solar Limited (CCS) is a community benefit society, which in 2015 had solar PV panels installed on 312 local authority-owned homes in Cannock Chase district. The organisation is active in the Rugeley area and future community energy projects could be undertaken in collaboration with CCS, using their existing legal structure.

Structure: Volunteer led (Chair and Board) with one part time contractor (short-term project - based on grant funding).

Financing:

- ▶ One share offer: ~£750,000m (projected interest of 7%)
- ▶ Loan: £250,000
- ▶ Grant funding: £227,000, with £50,000 from local authorities
- ▶ Annual revenue from Feed-in-Tariff (FIT) and sale of electricity (£119,333 in 2018)

Stakeholders: 188 members, as well as the community and local authority.

Offering:

- ▶ 312 solar PV systems on local authority owned social housing
- ▶ Battery storage in addition to solar PV to enable increased self-consumption
- ▶ Community fund to support projects and activities aimed at reducing fuel poverty

Southern Staffordshire Community Energy (SSCE) is another option for project delivery. Up to now the Community Benefit Society has done two share offers (totalling £389,000) for rooftop solar PV projects across Staffordshire. This legal structure could be used for further project types.

2.1 Possible future scenarios (not limited to)

The vision: Reduce carbon emissions and fuel poverty, and enable the local community to have ownership, control and develop more resilience.

Possible offerings in the future:

- ▶ Solar installations on public/commercial buildings
- ▶ Solar farm
- ▶ Community aggregation of flexibility
- ▶ Heat pumps/networks
- ▶ Retrofit work
- ▶ EV chargepoints

3 Funding options

Raising finance is often cited as one of the biggest barriers to starting community energy projects. Below are the main options of funding that are currently used by community groups. Up-to-date information on funding opportunities, and more detail on the funding options below, can be accessed on the [Community Energy England's webpage](#).

Table 1: Funding options for community energy organisations

Type of funding	Example	Features	Applicability to Rugeley
<p>Grants</p> <p>A sum of money given by government, an organisation, or individual for a specific purpose.</p>	<ul style="list-style-type: none"> • Rural Community Energy Fund (RCEF) for renewable energy projects. • Biffa award for community buildings. • Domestic Renewable Heat Incentive (RHI) for renewable heat projects. • Stoke on Trent and Staffordshire LEP funding • Energy redress scheme for fuel poverty work. • Innovation funds such as Strategic Innovation Fund and Network Innovation Allowance. 	<p>Benefits</p> <ul style="list-style-type: none"> • Can be large sums of money, especially useful to kickstart projects. <p>Limitations</p> <ul style="list-style-type: none"> • Inconsistent source of finance. • Time consuming to apply. 	<ul style="list-style-type: none"> • RCEF possible for renewable projects through Midland Energy Hub. The upcoming deadline is 3/01/22. • Up until the end of February 2022, only registered charities are able to access and apply for the energy redress scheme, with CBS, Community Interest Companies (CIC's) and Co-ops being able to access the funding from March 2022. The core priority of this funding is to help vulnerable customers at risk from cold homes and high energy bills. • Innovation funding is applicable for new, innovative solutions to net zero.
<p>Share finance (community share offers)</p> <p>A sum of finance raised for a project from the local community by putting out a share offer. In community organisations, it is often one member, one vote irrespective of how many community shares you may own.</p> <p>Can get the Community Shares Standard Mark which provides a framework for organisations to develop share offer documents and ensures that they are clear, honest and transparent.</p>	<ul style="list-style-type: none"> • Ethex, a not-for-profit investment platform that is often used to raise the shares. • Co-op UK share booster programme with potential for match funding. • Edinburgh Community Solar Cooperative (ESSC) raised £1.48m in community shares • Carbon Co-op share offer for retrofit. 	<p>Benefits</p> <ul style="list-style-type: none"> • Cheaper form of finance in short to medium term compared to debt finance. • Flexible, annual return at discretion of board of directors. • Engages members and local community. <p>Limitations</p> <ul style="list-style-type: none"> • Potential lack of security for investors (not FSC approved). 	<ul style="list-style-type: none"> • Possible under CBS structure (see section 4 for more detail). • Can be used for generation projects, EV chargepoints and retrofit work.

3 Funding options

Type of funding	Example	Features	Applicability to Rugeley
<p>Loan or debt finance A sum of money borrowed from a bank, investment fund or individual.</p>	<ul style="list-style-type: none"> Loans from Triodos, REIF, Charity Bank etc. Loans from local authorities. Green Energy Mull borrowed £500,000 from Charity bank and £434,000 from REIF. 	<p>Benefits</p> <ul style="list-style-type: none"> Loans from local authorities can have lower interest rates and be less bureaucratic than banks. <p>Limitations</p> <ul style="list-style-type: none"> Can be a very high cost of finance, even with ethical banks. Repayments are according to a strict schedule. 	<ul style="list-style-type: none"> Likely needed for generation projects. Loans from local authorities are highly dependent on the willingness of the local authority. Having a good relationship with the local authority is beneficial.
<p>Community loans and bonds A sum of money borrowed from community investors via a loan or bond agreement. With a loan, the capital and interest will be repaid on a regular basis whereas with a bond, the capital is usually paid at the end of the agreed time period, with the interest being paid at regular intervals.</p>	<ul style="list-style-type: none"> Energise Barnsley have recently announced a bond issue on the Ethex platform offering a 4% return for a project involving solar PV and battery storage installations. Gwent Energy CIC formed 'The Investor Club' which raises finance in the form of loans and bonds. In 2018, Bath and West issued three solar bonds. 	<p>Benefits</p> <ul style="list-style-type: none"> Investment from bonds, unlike shares, does not mean the investor becomes a member of the organisation. Bonds are good for large amounts of money, where the ability to raise money via local investors using share offers is lower. 	<ul style="list-style-type: none"> Appropriate for large amounts of finance needed for bigger projects.
<p>Revenue from energy generation The profits from any renewable energy assets which are owned by the organisation.</p>	<ul style="list-style-type: none"> Established community energy organisations, such as Green Energy Mull, receive revenue each year from their hydro scheme. 	<p>Benefits</p> <ul style="list-style-type: none"> Revenue from generation owned by a CBS or CIC must benefit the community. <p>Limitations</p> <ul style="list-style-type: none"> Only possible if the organisation owns the generation assets. Revenue is higher from schemes that used the Feed-In-Tariff (FIT) which is no longer available. 	<ul style="list-style-type: none"> If generation was installed, this could be a possibility in the future.

3 Funding options

Type of funding	Example	Features	Applicability to Rugeley
<p>Crowdfunding/Donation</p> <p>A way to raise money that does not have to be repaid.</p>	<ul style="list-style-type: none"> • Harbury e-wheels raise funds through one-off donations as well as regular standing orders to run their transport service. 	<p>Benefits</p> <ul style="list-style-type: none"> • Useful as one of many revenue streams. <p>Limitations</p> <ul style="list-style-type: none"> • Less likely to get large sums of money. • Relies on generosity of donors. 	<ul style="list-style-type: none"> • Would need to create a vision of specific projects that people are willing to donate to, as well as building trust with donors to assure them the money will be used effectively.
<p>Soft loans</p> <p>Low/no interest loans from high-net-worth individuals interested in helping the community.</p>	<ul style="list-style-type: none"> • BHESCo was given an interest free loan of £62,294 from its founder for the start-up costs of the first two years. 	<p>Limitations</p> <ul style="list-style-type: none"> • Highly reliant on a high-net-worth individual being interested and invested in helping a community energy organisation. 	<ul style="list-style-type: none"> • Would be worth doing a scanning exercise of high-net-worth individuals in the Rugeley area.
<p>Power purchase agreements (PPA)</p> <p>A financial instrument where the demand customer has a contract with the generator to buy electricity. There are two main different types of PPA. For an introduction on PPAs click here.</p> <p>Will be needed for a generation project.</p>	<ul style="list-style-type: none"> • Wolverton Community Energy Limited own solar PV on Stony Stratford parish council's building with a PPA with the council for the electricity used. 	<p>Benefits</p> <ul style="list-style-type: none"> • Can make a project viable by protecting against the volatility of the market. <p>Limitations</p> <ul style="list-style-type: none"> • Need an energy user or users to agree to a PPA with the projects. 	<ul style="list-style-type: none"> • Applicable to electricity generation projects if it's possible to find a demand customer to enter a PPA with. Currently applicable for hedging against future energy price rises. • If there is local authority support, could look into a local area electricity tariff or a local sleeving pool.

4 Legal and governance structures

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The legal structure of an organisation has significant impacts on the way in which it is governed and its ability to access different types of finance. The below table outlines the different types of structures available, alongside the benefits and limitations of each one. The majority of community energy organisations are either a Community Interest Company (CIC) or a Community Benefit Society (CBS).

More detail about each structure can be found [here](#) or [here](#).

Table 2: Possible legal and governance structures for community energy organisations

Legal structure	Description	Key features
Community Interest Company (CIC)	A limited company who operate to provide a benefit to the community they serve. Investors are permitted, if balanced and reasonable. Includes 'asset lock', meaning any assets (including profit) must be used for community benefit (see glossary).	<ul style="list-style-type: none"> • Subject to 'light touch' regulation so are easy to set up and run. • Not able to raise community shares, only ordinary shares. • Doesn't stipulate one member, one vote democratic agreement. • Cannot become a charity. • Required to file annual accounts with companies house. • Have been used in the past by commercial companies to pose as community entities to access subsidies.
Community Benefit Society (CBS)	A society that is required to conduct its business for the benefit of not just its own members, but the wider community. When the organisation is being incorporated, a set of rules are agreed. One of these includes the option to have an asset lock (see glossary). If the organisation chooses to have an asset lock, the organisation cannot become a charity.	<ul style="list-style-type: none"> • Access to government subsidy and loan financing. • Ability to raise community shares and can pay interest to shareholders at a rate to retain enough capital. • - One member, one vote, irrespective of how much they have invested in the business.
Charitable Incorporated Organisation (CIO) e.g. Plymouth Energy Community Trust .	CIOs require that any decisions made by trustees must support the organisations charitable aims and must benefit the public.	<ul style="list-style-type: none"> • Tax efficient way of distributing surplus from other community energy legal structures. • Uncommon for renewable projects due to primary economic activity of energy projects not being charitable. • More complex registration and likely take longer than other structures. • Not required to file accounts with companies house. • Useful for organisations to access additional grant funding streams such as energy redress scheme.

4 Legal and governance structures

Legal structure	Description	Key features
Co-operative	An independent business, owned and controlled by its members. Exists for the benefits of its members, though often support the communities they work with.	<ul style="list-style-type: none"> • Broader distribution of power. • No asset lock – assets can be liquidated to pay back investment. • Not favoured by government grants as they are designed to serve their members. • One vote for each member, irrespective of how much they have invested in the business. • From 2014, the Financial Conduct Authority (FCA) stopped taking applications from new energy co-operatives.

New projects in a community energy organisation, such as a CBS, can be contained within one legal structure using different membership types (depending on the structure). This is normally linked to specific share offers with different levels of return for shareholders.

Additionally, a useful mechanism to unlock the ability to undertake certain projects are special purpose vehicles (SPVs). These are subsidiary organisations created by a parent company. Benefits of this model include being able to create a more appropriate branding, and isolating financial risk to protect the assets in each organisation individually, so if one fails, they do not all fail. An important consideration is that running an organisation has costs from administrative functions, AGMs, accounting etc. (this can be anywhere from £1,000 to over £40,000 depending on the organisation's assets). Therefore, each additional organisation will create additional costs.

5 Applicable to Rugeley?

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In this section, we look at the current ambitions of communities in Rugeley. In Table 3, the second column indicates the applicability of each ambition to Rugeley, with the key considerations and exemplar case studies laid out in the third column. In Table 4, there is a traffic light system to indicate how appropriate particular legal and governance structures and funding streams are for each ambition.

Table 3: Key considerations and exemplar case studies for the different ambitions of Rugeley

Ambition for Rugeley	Appropriate for Rugeley?	Key considerations and exemplar case studies
<p>Solar installations on public/commercial/community buildings</p>	<p>Yes</p>	<ul style="list-style-type: none"> • How much are they going to cost? • How much is going to be saved on bills? • Who owns the building? If it's owner occupied, the legalities are likely to be less complex. If the occupant does not own the building, the savings on energy bills could be overshadowed by the legal costs. • Could the installation be co-located with energy storage? • How much onsite usage is there going to be? • The installation of solar generation is only viable in certain cases. • Example: Grimbsy community energy have recently installed 98 kW of solar PV, financed by a community share offer totalling £68,000 and an additional £10,000 already in the bank.
<p>Solar farm</p>	<p>Yes</p>	<ul style="list-style-type: none"> • Is there an affordable grid connection nearby? • What is the size of the farm, and how much can be exported? • Is there the possibility of a PPA and/or onsite usage? • Is there a possibility of a private wire arrangement with a large energy user? • Could the solar farm be co-located with energy storage? • Could look to purchase existing solar farms in the area, or solar farms in planning now e.g. Cawarden solar farm by Spring Che Energy; however, returns will be smaller as the development is already complete and projects de-risked. • Could own/develop part of a commercial solar farm that is being developed in the local area, sharing a grid connection and other assets. The tighter margins in the subsidy free solar market may make this challenging. • More financially viable above 10 MW, with most commercial projects closer to 50 MW. • Example: Ray Valley Solar, a 19 MW solar park being built by Low Carbon Hub. The funding for this project was from share offers, loans from Triodos bank and the council, as well as innovation funding through Project LEO.

5 Applicable to Rugeley?

Ambition for Rugeley	Appropriate for Rugeley?	Key considerations and exemplar case studies
Heat pump heat networks	Maybe	<ul style="list-style-type: none"> • Heat networks have been considered for the new housing development at the power station site, but were discounted. • There have been assessments of shared ground loop heat networks in a few areas of Rugeley. However, the housing density is not high enough in the majority of the study area. • Heat networks can be difficult and are better developed by local authorities due to difficulties around land ownership. • More suitable for new housing estates like Cranbrook, Exeter. Example: BHESCo is working with Firle estate to create an affordable, low carbon heat network in the village.
Energy efficiency - retrofit work	Yes	<ul style="list-style-type: none"> • Does the local authority have funding from abandoned Green Homes Grant? • Is there an able to pay market in the local area? • Are there suitable suppliers and businesses to deliver the work? • Consider model similar to People Power Retrofit, which was originally grant funded; however, is now supported by community share offers. • Could consider 'Retrofitworks' model which is a franchised system you can buy and deliver in the local area. It is an app-based process, where local groups (trained as retrofit coordinators), local businesses and installers register on the platform. In this model, local businesses benefit and there is more consistent pricing for the service and proper consumer protection. • Only really works at scale, and would likely have to partner with local authority.
Energy efficiency – energy advice/fuel poverty	Yes	<ul style="list-style-type: none"> • Notoriously challenging business model, and normally funded via grants of surplus from generation projects. • Are local councils willing to fund energy advice work? • Are there community members willing to be trained up to give advice? • Example: South Dartmoor Community Energy provide energy advice services through home visits, calls and emails to reduce energy usage and overall spend. • Potential to collaborate with Beat the Cold who are already working on this in the area.

5 Applicable to Rugeley?

Ambition for Rugeley	Appropriate for Rugeley?	Key considerations and exemplar case studies
Innovation projects	Yes	<ul style="list-style-type: none"> • Suitable if the innovative idea to decarbonise the system hasn't been done before. • Zero Carbon Rugeley (ZCR) detailed design project has the opportunity to work up a proposal for further innovation funding for a smart local energy system project. • Worth asking Innovate UK for further funding to use up underspend in the final year of ZCR if there are innovative project ideas that could be delivered now. • Example: Project LEO (Local Energy Oxfordshire) is part funded (£15 million) from the Industrial Strategy Challenge fund. It is an innovative, cross-collaborative project running trials to understand how technologies and services closest to where people are using energy can benefit local communities and the energy system.
EV chargers	Yes	<ul style="list-style-type: none"> • Are there available connections to the network for EVs in local area? • Is there a suitable site? This can be the biggest challenge. Local authorities or local landowners who are prepared to give or lease their land are usually the best option. • Are there people in the area who will use the charger? Chargers are mainly used overnight. • How much money will it cost to install? This can be from £10,000 - £50,000 to install with potential additional legal costs, which can be high. • Charge my Street's business model uses debt, grant, share funding as well as revenue from charging cars.

5 Applicable to Rugeley?

Table 4: A traffic light system indicating how appropriate particular legal/governance structures and funding streams are for Rugeley’s ambitions. Whilst the majority of recommended legal/governance structures can be paired with the recommended funding streams, there may be exceptions where this is not possible.

	Legal/governance structures					Funding streams							
	Use existing legal structures of CCS/SSCE	Create CIC	Create CBS	Create CIO	Create Co-operative	Grants	Community shares	Bank loan or debt	Community loans and bonds	PPA	Crowdfunding	Surplus from energy generation	Soft loans
Solar installations on public/commercial buildings	Green	Yellow	Green	Red	Red	Green	Green	Green	Green	Green	Red	Yellow	Green
Solar farm	Green	Yellow	Green	Red	Red	Green	Green	Green	Green	Green	Red	Yellow	Green
Heat pump heat networks	Green	Yellow	Green	Red	Red	Green	Green	Green	Green	Red	Yellow	Yellow	Green
Energy efficiency - retrofit work	Green	Green	Green	Green	Yellow	Green	Green	Green	Green	Red	Yellow	Green	Green
Energy efficiency – energy advice/fuel poverty	Green	Green	Green	Green	Yellow	Green	Red	Red	Red	Red	Green	Green	Green
Innovation projects	Green	Green	Green	Green	Yellow	Green	Red	Red	Red	Red	Red	Red	Red
EV chargers	Green	Yellow	Green	Red	Red	Green	Green	Green	Green	Red	Red	Green	Green

6 Final comments and suggestions

In this section, we bring together the different parts of this report to give recommendations for possible projects to pursue, the legal structure that would enable communities to meet their ambitions and opportunities to collaborate.

Recommended projects: Building on the success of the existing rooftop solar PV projects and energy storage projects from CCS in Rugeley, we would advise adding further buildings to this portfolio. We would also recommend looking into viable large-scale renewable energy projects near Rugeley that would be eligible for RCEF and have a larger impact. The most viable project options are:

- ▶ **Solar installations on public/commercial buildings with or without energy storage** – There is good expertise in the area already with lots of potential buildings identified through ZCR. There are clearly demonstrated business models that are easy to finance, for example, issuing community shares and bonds.
- ▶ **Sole or joint development of solar farm** – An existing pipeline of solar farms in planning in the local area is good evidence of the potential in and around Rugeley. The commercial subsidy free solar farm model works at the larger scale of 30-50 MW; there may be potential to partner in a joint development. But there are also examples of smaller community-owned solar farms being developed.
- ▶ **Innovation projects** – Build on the success of ZCR and look for other opportunities in the innovation funding space. The existing set of consumers, generation, and energy storage could be used as an asset to attract partners and funders.
- ▶ **Energy efficiency – retrofit** – Benefits those in fuel poverty directly and existing relationships with Beat the Cold and the local authority could be used to help consumers in Rugeley.

Legal structure: The most obvious path of least resistance includes doing any projects with or under CCS or SSCE. For this to succeed CCS or SSCE will need to be very clear about their vision and objectives, whilst also enabling new ideas and people to step forward to support the delivery of new projects. Alternatively, a new CBS could be set up – this legal structure would be the most suitable for the ambitions above.

Collaboration is key: There is a huge opportunity as part of the ZCR consortium to engage new people and develop new project ideas, as well as apply for funding and further collaboration with consortium partners and the local authorities. If multiple organisations were set up, it would be recommended to have a network, such as [Devon Community Energy Network](#) between local groups to ensure knowledge sharing, peer learning, and collaboration.

7 Appendix 1: Community aggregation of flexibility

While local flexibility income is not sufficient to form the basis of a current community energy business model, trials have shown that an Energy Community Aggregator Service (ECAS) is technically able to provide flexibility services to a DNO through domestic demand side response (DSR). Market research also suggests that a service which offers local, trusted support and technical assistance, while promoting carbon saving and community resilience, is valued by early adopters of low carbon technologies.

The ECAS model enables community energy organisations to aggregate domestic flexibility from home batteries, heating systems and smart EV chargers to sell to a DNO in a constraint management zone (CMZ). Rugeley and Cannock are both in CMZs, so CCS/SSCE could potentially provide flexibility to WPD through [Flexible Power](#).

In order to determine an estimated income from local flexibility markets for CCS-associated properties with battery storage, we have used estimated income benchmark information that WPD publishes on its Flexible Power website, through the [value calculator](#). For the Rugeley SGT zone (covering Rugeley and Cannock) the indicative earning rate is £0.39 per kW of capacity per year; the maximum that an asset could earn if it is available and dispatched for the duration of WPD's annual requirement. For the Rugeley SGT zone, this annual requirement for 2021 is demand turn-down or generation turn-up on Monday, Wednesday and Thursday mornings and evenings in November and December. This means that the combined capacity of CCS domestic battery storage would be available to discharge its power to the grid at these times.

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