

# Community Energy State of the Sector 2018

Full Report



Annual Review of Community Energy in England,  
Wales and Northern Ireland





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## Foreword

We are proud to launch our second State of the Sector Report. With our partner Scene, we thank everyone who took the time to participate in and support the production of this important research project and report.

Community energy has faced many changes to policy, regulation and finance over the last couple of years, and the model that delivered an incredible amount of community energy projects is now in question. There is also a lingering uncertainty around the impacts of Brexit which is bringing additional challenges.



The findings of this report reflect the results of those changes, with reductions in the number of new projects being developed and new community organisations being formed.

However, there are also many positive messages. 2017 saw an increase in large-scale generation, private assets being brought into community ownership, greater collaboration and innovation in finance, new technologies and business models. Community energy continues to provide far more than the generation of renewable energy, with organisations working hard to deliver environmental, social and economic benefits for their local areas. It is clear that, when people come together to tackle energy issues, a multitude of sustainable development and charitable outcomes are achieved.

As a sector, we are passionate, resilient and innovative and there is a sense of optimism over the longer-term prospects for community energy as we start to explore new models such as local supply, storage and peer-to-peer trading. Now we must adapt to reduced government support and make the most of this bridging period through collaborative working and creative thinking. We have worked hard to come this far and community energy simply brings too much value to stop here.

The wider energy sector is going through a radical shift as we move towards a smart, decentralised, low-carbon energy system. Community energy will be vital in ensuring that this energy transition leads to a more equitable, affordable, stable and environmentally sensitive energy system. To enable this, communities need clearer national and local strategies which include early stage funding, financing support and subsidy review. We look forward to working with our members, partners and supporters to ensure that people are put firmly at the heart of a truly democratic energy transition.

**Emma Bridge, CEO  
Community Energy England**

**Robert Proctor, Business Development Manager  
Community Energy Wales**



The energy system in Great Britain is changing, and community energy remains a big part of this transformation. Northern Powergrid champions support for community and local energy stakeholders where we continue to see interest and development of projects involving renewable generation and energy efficiency. Our role remains one of using our knowledge to leverage the hard work from communities across our region to provide a helping hand through engagement, education, communication, funding and offering accessible services.



In our innovation programme, we continue to explore the potential benefits from new technologies and access to new services and revenue streams. One example of such a project is our Distributed Storage and Solar Study near Barnsley. Together with the community and other partners, we are working to understand how customers' energy bills may best be reduced by capturing energy from solar panels and delaying its use with a small domestic battery.

In its fourth year of supporting community energy, our seed fund 'the Northern Powergrid Partnering Communities Fund' has awarded support to nine projects with a focus on promoting energy efficiency measures and alleviating fuel poverty. We also concentrated on supporting those that needed it most by promoting the use of the Priority Services Register; enabling additional support for vulnerable energy consumers during a power cut. So far since it began, more than 2,700 people have been reached with efficiency, switching and in-home measures through the community energy projects funded.

We commend Community Energy England for its continuing work to provide an evidence base and a voice for a diverse sector and key constituency of our customer base.

**Jim Cardwell, Head of Trading and Innovation  
Northern Powergrid**

As the North West's electricity distribution network operator, we're proud to support this State of the Sector report. Community and local energy has an important role to play in the transition to active, low carbon and decentralised energy networks.



We appreciate the sector is going through a challenging time, but it is showing resilience and flexibility to adapt and these are skills that will be essential to take advantage of the opportunities the future will present. We would like to work together to make sure we can take advantage of them to transform all of our communities.

Building relationships with, and services for, customers in this area is a priority for us and we recently launched our Community and Local Energy Strategy, which sets out how we will work with the sector in our region.



As part of the strategy, we aim to deliver a new network-led approach which focuses on where supporting community and local benefit could help deliver other objectives such as protecting vulnerable customers, improving energy efficiency or reliability. It links to our Value of Lost Loads (VoLL) project which has developed a new way of valuing the social loss of electricity supply to





different groups of customers. This tells us that supply interruptions have a greater impact on the fuel poor and previously this has been underestimated. VoLL was completed with a significant amount of customer engagement and gives us a better way to develop the business case for investments on our networks.

Effective engagement is essential and working closely with community and local energy groups remains as crucial as ever to securing the affordable, low carbon energy system we all need. We welcome this report and the work of Community Energy England to support the development of the sector.

**Helen Seagrave, Community Energy Manager  
Electricity North West**

It's easy to reduce our energy system to numbers: megawatts installed; the cost of electricity; tonnes of carbon emitted. These facts tell an important story that can guide policymaking.

Community Energy England's State of the Sector statistics are an important contribution that would otherwise be neglected. Without this work, the Government would not know the significant contribution communities are making to clean, green electricity production. Nor would we have the evidence to show how policy changes have almost paralysed the development of the sector.

But numbers only tell a partial tale. The magic of community energy is in the people. The real triumph of this report is that it illustrates some of the spirit of community energy. Few private companies could aspire to the enthusiasm, innovation and conviction that local people have shown in their efforts to be part of a new energy revolution. The dynamism waiting in local communities to create a democratic, decentralised and decarbonised energy system is inspiring—and it is a significant prize for policymakers to unlock.

At Westmill Solar Cooperative, we are constantly amazed by the generosity and drive of our members. We are also delighted to be part of the wider community energy community, brought together by CEE, which demonstrates so many of the principles of mutual support and ethical decision-making that guide us as a cooperative.

We are pleased to support this insightful report and we commend these findings to Government, in hope of the policy changes needed to enable a truly local, clean energy system—one that can unfetter the brilliance of community energy and allow many more people to be part of this clean, green energy revolution.



**Tom Parkinson, Chairman  
Westmill Solar Co-operative**



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## Acknowledgements

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The *Community Energy: State of the Sector Report 2018* was prepared by Scene Connect on behalf of Community Energy England and Community Energy Wales.

The report benefitted from invaluable assistance from staff and board members at Community Energy England and Community Energy Wales, who provided essential contributions to the research.

We received support and insight from parallel research project teams at Regen and the Tyndall Centre at the University of Manchester. We also thank the Esmée Fairbairn Foundation, Electricity North West, Northern Powergrid and Westmill Solar Co-operative for financially supporting this year's State of the Sector report.

With further thanks to the Westmill Wind Farm Co-operative for providing the cover photo and to Heart of England Community Energy, Drumlin Wind Energy Co-operative, Partneriaeth Ogwen and Lesmahagow Development Trust for providing photos for use within this report.

Further acknowledgement should be extended to all community energy organisations who participated in this research as well as for the support of key regional and umbrella organisations within the community energy sector, including:

- |                              |                               |
|------------------------------|-------------------------------|
| ◆ 10:10                      | ◆ Low Carbon Hub              |
| ◆ Communities for Renewables | ◆ Mongoose Energy             |
| ◆ Community Energy London    | ◆ North East Community Energy |
| ◆ Community Energy South     | ◆ Pure Leapfrog               |
| ◆ Energy4All                 | ◆ Regen                       |
| ◆ The Energy Saving Trust    | ◆ Sharenergy                  |



# 1 Introduction

Building on the first State of the Sector Report, which was published in 2017, this report is the second annual review of the community energy sector in England, Wales and Northern Ireland. The report is funded primarily by Community Energy England (CEE) and supported by Community Energy Wales (CEW), Electricity North West, the Esmée Fairbairn Foundation, Northern Powergrid, Scene Connect (Scene) and Westmill Solar Co-operative.

## 1.1. Research Basis

The first State of the Sector Report ('First Report'), provided a comprehensive review of community energy in England, Wales and Northern Ireland up to the end of 2016. The research built upon initial attempts to quantify and understand the sector, including CEE's 2015 report, *Community Energy: Generating More than Renewable Energy*<sup>1</sup>. This report investigates new developments in the community energy sector and tracks ongoing changes throughout 2017.

The First Report identified and gathered data from 222 community energy organisations, focusing on a variety of factors that enable or limit success for community energy organisations. Data collected focused particularly on:

- ◆ Community energy organisations and their make-up
- ◆ Low carbon activities with which these groups engage
- ◆ How low carbon activities are funded and financed
- ◆ Community outcomes and future plans
- ◆ Barriers to community energy organisations and the outlook of the sector

Through this information, CEE built up a picture of the sector up to the end of 2016, providing an understanding of how organisations function, where the greatest successes have been achieved and demonstrated the ongoing impacts from a loss of policy support.

Aimed at influencing a more supportive policy landscape for community organisations engaging with low carbon energy, the report has subsequently been used to influence and inform policy makers, supporting organisations and funders engaged with the community energy sector.

## 1.2. State of the Sector Report 2018

This year's report is a review of how the community energy sector has developed and changed throughout 2017 in England, Wales and Northern Ireland. The research follows similar themes to those mentioned above, identifying community energy organisations and recording their activities along with the successes, barriers and future plans within the sector. This year's report also includes a specific focus on the geographical spread of community energy in the UK and the innovative approaches taken to deliver community energy projects.

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<sup>1</sup> Quantum Strategy & Technology Limited (2015)  
[www.communityenergyengland.org/files/document/38/1494515699\\_CEE-Survey-2015.pdf](http://www.communityenergyengland.org/files/document/38/1494515699_CEE-Survey-2015.pdf)



This report details how projects have progressed across the community energy sector during 2017, including:

- ◆ Updates on projects previously recorded as part of the First Report
- ◆ Ongoing community outcomes from previously recorded projects
- ◆ Newly developed projects in 2017
- ◆ Funding and financing in 2017
- ◆ Barriers to project development in 2017
- ◆ Plans into 2018 and beyond

Chapter 4 also provides details on how community energy is distributed throughout the UK and investigates locally specific characteristics, support and barriers.

Concurrent with the preparation of the State of the Sector Report 2018, two further research projects have been conducted into the UK community energy sector. This includes an investigation of community energy in Devon, conducted by Regen<sup>2</sup> (published May 2018) and research focusing on financing within the sector led by the Tyndall Centre at the University of Manchester<sup>3</sup>, due to be published in summer 2018.

### 1.3. Project Team



Community Energy England (CEE) commissioned this report and the First Report in 2017. CEE was established in 2014 as a not-for-profit organisation with a mandate to help create the conditions for the community energy sector to grow and advocate community energy sector's agenda. It acts as the representative body for community energy organisations in England, including partner organisations which support and work with communities.



CEW aims to put sustainable energy schemes at the heart of communities in Wales. Communities can become stronger, more resilient, and self-reliant by generating their own energy, using it efficiently, and directing the net income to regenerate their communities. Constituted in 2012 and with over 70 members, CEW helps to bring about this change by inspiring, empowering, and influencing people, policies and practices across Wales.



Scene managed and administered the State of the Sector survey on behalf of CEE in early 2018 and is the main author of this report. Scene is a renewable energy consultancy focusing on developing renewables projects with communities and supporting the sector through research such as this report. Scene is a founding member of the Scottish Community Energy Coalition and a contributing member to Community Energy England.

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<sup>2</sup> Regen (2018) Devon Community Energy Impact Report 2018 [www.regensw.co.uk/devon-community-energy-impact-report-2018](http://www.regensw.co.uk/devon-community-energy-impact-report-2018)

<sup>3</sup> University of Manchester (2018) Community Energy Financing [pending summer 2018]





This report has been prepared with the financial support of several key organisations within the community energy sector.



Electricity North West operates the electrical grid in North West England. They have previously engaged with, and supported the work of, several community energy groups in the North West and recently launched a dedicated local energy strategy towards a more innovative and inclusive mode of energy system management.



Northern Powergrid operate the electrical grid throughout the North East of England. They are heavily involved in community energy, offering funding and support to communities to develop their own projects, through their 'Partnering Communities Fund', as well as supporting community renewables research projects, including the First State of the Sector report.



The Westmill Solar Co-operative has over 1,500 members and operates one of the UK's largest solar farms, with 4.8 MW of generation capacity. Westmill has supported a number of initiatives through its Sustainable Energy Trust (WeSET) including further community energy projects, low carbon education initiatives and research.

#### 1.4. Methodology

This section provides an overview of the research approach as part of the State of the Sector Report 2018. A full methodology can be found in Appendix B.

Community energy was defined through particular definitions of "Community Organisation" and "Energy Group" in line with the previous report.

*Community Organisations:* organisational bodies owned or managed (entirely or in part) by individuals from a community to the benefit of a defined area or group.

*Energy groups:* groups involved in one or more of the following activities:

- ◆ Energy generation
- ◆ Energy storage
- ◆ Energy efficiency and demand reduction
- ◆ Electric vehicles or low carbon transport initiatives

Data was collected through three separate surveys, targeted at specific groups:

- ◆ Returning community groups from the First Report
- ◆ Newly identified groups or those who had not responded previously
- ◆ Groups with stalled or inactive projects

A Welsh version of the survey was also distributed to ensure data could be collected from those groups with a preference to respond in Welsh. Further data was sourced from project partners conducting similar research projects during the data collection phase.





The research surveyed 171 community energy organisations between January – March 2018, including:

- ◆ 115 returning organisations;
- ◆ 47 newly identified organisations;
- ◆ 9 stalled projects.

Further data was collected on 57 organisations that did not respond to the survey this year. Basic details on their organisation and activities were collected though this did not include in-depth data specific to 2017, such as project financing and motivations. This data was sourced from responses to the First Report and augmented with desk-based research and secondary sources, such as the Community Shares Unit (2017)<sup>4</sup>.

Of the total 228 organisations included in this study, 197 are from England, 30 from Wales and 1 from Northern Ireland (the figures for the First Report were 125, 18 and 1 respectively). The increase in numbers is predominantly a result of improved identification of existing community energy groups in the period between the two reports.

Although the project team has done their utmost to identify all organisations that meet the criteria outlined above, some organisations may have been missed. The survey will be repeated on an annual basis. If there are community energy organisations missing from this report that meet the criteria, they will be added in future years<sup>5</sup>.

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<sup>4</sup> Community Shares Unit (2017) [www.communityshares.org.uk/open-data-dashboard](http://www.communityshares.org.uk/open-data-dashboard)

<sup>5</sup> To take part in next year's State of the Sector, get in touch with CEE at: [info@communityenergyengland.com](mailto:info@communityenergyengland.com)



## 2 UK Community Energy in 2017

### 2.1. Overview

The First State of the Sector Report (covering the period to the end of 2016) found that the growth of the community energy sector is becoming increasingly limited by an unsupportive policy landscape and several further key barriers to energy activities and successes. In the face of growing barriers, communities in the UK have shown impressive resilience, investigating new and innovative routes towards low carbon energy and community development.

2017 saw a number of successes within the community energy sector, as detailed within this report, but there has been an overriding sense of challenge for both communities and those supporting the sector. Though a number of headline projects succeeded in 2017, there is evidence of a wholesale decline in the number of new organisations and energy projects over the last year. This decline was found to vary between technologies, scales and project locations. In response, an increasing focus on new business models, including behind-the-meter renewables, direct or local energy supply and a more collaborative approach to community energy, is driving forward a new agenda in the community energy sector.

Through this report, CEE and CEW seek to review these successes and innovations, but also to detail and understand the barriers to development, where things are not working and what changes and improvements will enable future success.

#### 2.1.1. Policy Review

Over the last few years, much of the support for onshore renewables - including subsidy schemes and tax incentives - have been removed or reduced. Notably, the 2015 cuts to the Feed-in Tariff have been extremely damaging to the renewables sector, increasing project risk and reducing financial margins for electricity generation projects. Alongside this, the removal of pre-registration for new rooftop solar schemes has increased the risk of many proposed community renewable projects. The removal of several tax incentives has also made larger, higher risk projects less attractive to potential funders and investors.

At present, large scale onshore wind projects do not have access to subsidies, due to the removal of Renewables Obligations Certificates (ROCS) and an inability to compete for the Contracts for Difference (CfD) subsidy auction. Small and medium scale wind, solar PV and other electricity generation projects have access to a greatly reduced Feed-in Tariff (FiT), due to end on 31 March 2019. In fact, in the case of wind, the greatly limited amount of FiT allocated to onshore wind means that the subsidy is effectively no longer available. Heat generation projects are eligible for Renewable Heat Incentive (RHI) support for both domestic and non-domestic projects and BEIS Heat Network Invest Project (HNIP) grants. However, the long lead time of the projects and the short-term nature of the grants results in uncertainty as to whether support will still be available when projects are commissioned.

Tax incentives, including the Enterprise Investment Scheme (EIS), Seed Enterprise Investment Scheme (SEIS) and Social Investment Tax Relief (SITR), became ineligible for renewable energy schemes in late 2015, significantly increasing the difficulty for groups attempting to raise capital for higher risk, innovative and larger scale projects.

The First Report found that these policy changes had made it “*extremely challenging*” for the sector in 2016 and that improved government support is crucial “*in supporting community successes*,



*innovations and ultimately development throughout the UK.”* With no major changes to these programmes and little in the way of new support mechanisms, limited growth and fewer project successes were expected in 2017.

## 2.2. England

The First Report identified 186 communities in England engaged in community energy, including 144 groups with active energy generation projects and 42 groups actively engaged in energy efficiency, demand management, low carbon transport or energy storage within their communities.

Up to the end of 2016, 118 MW generation capacity was identified in England. Solar PV was found to be most prevalent generation technology (98 MW) and wind generation projects accounted for 18 MW, alongside a further 1.3 MW of identified hydropower capacity. 6 organisations were found to have active heat generation installations, totalling 0.3 MW.



*Figure 1 – Heart of England Community Energy's (HECE) 14.7 MW solar farm installed in 2017 with the support of Mongoose Energy.*

2017 has seen several high-profile project successes, balanced against an overall reduction in activity throughout the sector. Notable projects include the purchase of a 14.7 MW solar PV installation in Wiltshire by Heart of England Community Energy (HECE), in partnership with Mongoose Energy and renewable energy developer, Anesco. The High Winds Community Energy Society (a member of Energy4All) developed its wind energy portfolio, increasing its generation capacity through the purchase of the 6.9 MW Mean Moor wind farm in partnership with two other Energy4All co-operatives, Energy Prospects and Baywind Energy. A 5 MW solar farm was also purchased by a Devon based community, Yealm Community Energy, as part of an innovative new approach to community energy ownership through the Power to Change Community-owned Renewable Energy Partners (CORE) project. Additionally, CORE intend to purchase 6 to 8 new solar farms in the next 12 months and transferring them into community ownership. This new approach to purchasing and transitioning sites to community ownership has been one of the most notable developments in 2017.

Beyond these large generation projects, there have been continued efforts to develop rooftop solar and to innovate as a means of overcoming barriers to development, including battery storage, local energy supply and peer-to-peer energy trading.

There is still a limited level of public funding support for community energy in England, though it has been greatly reduced since the removal of the Urban Community Energy Fund (UCEF). Currently, funding is available through the Rural Community Energy Fund (RCEF) and the Rural Development Programme (RDP) for England through European Union (EU) LEADER funding. A number of funding streams are also available on a regional basis, such as the London Community Energy Fund, launched in 2017 by the Greater London Authority (GLA), and more local approaches, including Islington Council's community energy fund. In 2017, GLA provided £150,000 in development funding across 13 local energy projects in the London area. Key supporting organisations such as Thrive Renewables, Esmée Fairbairn Foundation and Friends Provident Foundation also provide funding to a small number of groups and initiatives.





### 2.3. Wales

The First Report found 33 community energy organisations in Wales. In terms of energy generation, wind energy was found to make up the greatest capacity with a further 6 hydro and 9 solar PV projects identified. 8 organisations were involved in energy efficiency or demand management projects within their communities.



*Figure 2 - The Partneriaeth Ogwen in Bethesda are involved in hydro generation and innovative local energy schemes*

Key successes in 2017 have been achieved through both traditional and new approaches to energy development. During 2016/17, the Awel Co-operative successfully raised over £8.25m, in part through a community share offer (£2.5m), towards the construction of a 4.7 MW wind farm near Swansea. Other initiatives have found success through collaboration, including the Swansea Community Energy and Enterprise Scheme (SCEES) which has worked closely with its local authority to install over 350 kW of solar PV on school and community facilities to date. Another notable project has been the Energy Local trial conducted in Bethesda, North Wales, which is linking local demand and hydro generation to reduce energy bills and maximise local energy use.

Wales benefits from a country specific funding initiative, Ynni Lleol, which replaced the Ynni'r Fro scheme that closed in 2016. Ynni Lleol – translating to local energy – provides expertise and financial support to communities and small businesses, similar to the Community and Renewable Energy Scheme (CARES) in Scotland. Administered by the Energy Savings Trust (EST), Ynni Lleol provides a toolkit for local renewable energy projects, as well as funding of between £1,000 – £35,000 for project development. As of February 2018, Ynni Lleol has provided financial support to 22 separate community energy projects. Development loans are also available through Ynni Lleol and Robert Owen Community Banking, which supports project development and installation through its Community Energy Fund.

### 2.4. Northern Ireland

Community energy initiatives in Northern Ireland are sparse and there is little support for communities to develop energy projects in comparison to the rest of the UK. The most cited example is the Drumlin Wind Energy Co-operative, which operates six 250kW turbines throughout the country. Drumlin was developed with the support of the Energy4All development team and is now a member of the Energy4All group of societies. Northern Ireland Community Energy (NICE), established in 2014 as a community solar focused social enterprise by individuals, several of whom are connected to Drumlin Energy, has provided free solar installations to third sector organisations across the country.



*Figure 3 – Drumlin Energy Co-op members at one of their six, 250kW wind turbines.*

As of April 2017, the Northern Ireland specific Renewables Obligation Certificate (NiROC) was discontinued. Furthermore, there have been issues in Northern Ireland with the Renewable Heat





Incentive (RHI) where many claimants have generated wasted heat for no purpose other than for financial gain. This has resulted in ongoing political enquiries into mismanagement and overpayment of subsidies under the RHI scheme. This subversion of a public funding stream has had a negative impact on peoples' perception of renewables subsidies in Northern Ireland and throughout the rest of the UK.

## 2.5. Scotland

The Scottish community energy sector is not included within this report, as separate data collection and reporting is conducted by the Energy Savings Trust (EST) on behalf of the Scottish Government<sup>6</sup>. Further details have been obtained from Local Energy Scotland (LES)<sup>7</sup>.

Following the early achievement of the Scottish Government's 500 MW target for community and locally owned energy in 2017, an increased target of 1GW by 2020 was set. As of June 2017, an estimated minimum capacity of 666 MW of locally owned capacity was identified by EST, 81 MW of which was defined as community led or owned (12%). This represents a 12% increase in community owned renewables capacity between 2016 and 2017 across more than 500 separate installations.

Though it has been similarly struggling with recent policy and support changes, Scotland has a publicly supported and mandated approach to local energy development. Through the Community and Renewables Energy Scheme (CARES), communities are able to access start-up funding, pre-planning loans, post-consent loans and innovation funding through a network of local development officers.



*Figure 4 - Lesmahagow Development Trust's 3rd turbine installed in summer 2017 in partnership with a local landowner.*

Innovation and funding is available to communities to address many of the challenges associated with the sector, including:

- ◆ Innovation Grants: allowing recipients to investigate innovations in local energy system feasibility or improve the viability of larger capital projects
- ◆ Local Energy Challenge Fund (LECF): aimed at enabling large-scale low carbon demonstrator projects
- ◆ Low Carbon Infrastructure Transition Programme (LCITP): aimed specifically at overcoming challenges within local supply, electrical grid constraints and energy storage
- ◆ Community Benefits of Civic Energy (COBEN): focused on developing local energy plans across public and community stakeholders in 4 locations across the West and North of Scotland

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<sup>6</sup> Energy Saving Trust (2017) Community and locally owned renewable energy in Scotland at June 2017. The definition of community and locally owned in the EST report includes community groups, local Scottish businesses, farms or estates, local authorities, housing associations and the public sector and charities.

<sup>7</sup> Local Energy Scotland (2017) CARES Progress and Impact Report 2017, see [www.localenergy.scot](http://www.localenergy.scot) for further details.



Particularly innovative projects in 2017 have included the Mull ACCESS project, which aims to virtually localise energy use from a community-owned hydropower project, and an innovative hydrogen storage project on the island of Orkney.

Shared ownership of renewables has been successful throughout 2017, with several community organisations partnering with public and private developers as a lower risk route to ownership. One example from 2017 is a Perthshire community that secured a 15% stake in a 9.2 MW wind farm. Another development in 2017 has been the recent decision taken by the Neilston Development Trust to sell its 8% stake in a local wind farm, raising £2m for immediate local re-investment.

There has also been strong cross border collaboration seen in Scotland, particularly through a number of successful projects developed by, or with the support of, national umbrella organisations, including Energy4All and Sharenergy. This includes Energy4All's recently completed 120kW Arrochar Hydro project near Loch Lomond.



### 3 State of the Sector 2018

This State of the Sector report identifies and analyses the community energy sector in respect to 6 key themes:

- ◆ Community energy organisations
- ◆ Community energy activities
- ◆ Community energy funding and financing
- ◆ Community energy outcomes and impacts
- ◆ The geography of community energy
- ◆ The policy context, barriers to implementation and future outlook for the sector

#### 3.1. Organisations

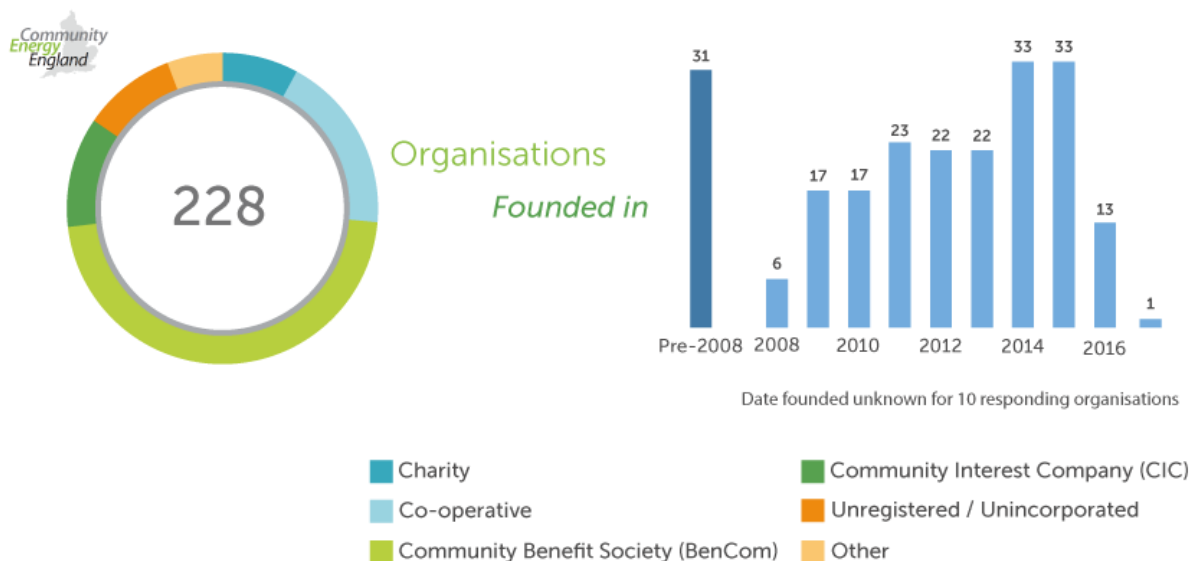


Figure 5 - Community organisations across England, Wales and Northern Ireland

228 community energy organisations were found to be active across England, Wales and Northern Ireland during 2017. There has been a steady increase in the number of community organisations constituted or formed over the last decade, reaching a peak of over 30 new organisations a year in 2014 and 2015.

2016 showed a marked decline in group formation on preceding years with just 13 formed in total, and only 1 new community energy organisation identified as having founded in 2017. This steep drop-off appears to correspond with recent changes in the renewable energy sector and support for community led energy projects from 2015 onwards, as well as the increasing difficulty and effort required to locate and progress suitable projects and sites. This drop-off is corroborated by the Community Shares Unit, which reported the lowest number and value of community share offers in a decade.

The reduction in new community energy groups is likely attributable to the decreasing viability of energy projects, which in turn may be affecting communities' enthusiasm and motivation to investigate energy projects. This is particularly true of communities without an existing renewable scheme, where the barriers to entry (e.g. expertise) are considerably greater than for those already engaged in the sector. A high number of responding organisations stated that they have future plans





within community energy, most often building upon projects developed by, and existing capacity within, the organisation.

### 3.1.1. People



Figure 6 - People within the community energy sector

Community energy groups were found to be supported by over 48,000 members, including local community members, investors and shareholders. Included in this figure are nearly 14,000 members within societies associated with “umbrella” organisations, such as Energy4All’s co-operatives, the Low Carbon Hub, Mongoose Energy and Communities for Renewables. These umbrella organisations generally have a number of related community co-operatives, Community Benefit (BenCom) and Interest Companies (CIC) which act autonomously to develop their low carbon projects. Individuals become members of their distinct local community organisations, which are then supported by the umbrella organisations with permanent staff who can offer development support, project management, administrative services, funding or other expertise.

70 community energy organisations reported that they employ staff, totalling 129 full time positions. A further 37 full time positions were reported by umbrella organisations or organisations with a wider business focus, often across multiple projects (e.g. Energy4All, Carbon Coop). A high average employment figure of 1.8 FTE was generally found to be associated with larger, more established community organisations, particularly with one or more operational energy generation project(s).

A further 123 organisations reported no paid staff, with over 1,800 volunteers supporting their work through 2017. Many organisations reported difficulties in estimating volunteer numbers and time commitments due to the number of projects and community members involved. Even so, volunteer motivation and recruitment were often considered a limiting factor to communities’ work, as smaller groups lack internal capacity and expertise to continue to keep developing their project(s).



### Swansea Community Energy and Enterprise Scheme (SCEES)

SCEES is a new community-owned renewable energy company, established by Swansea Council but run by an independent group of local directors. Their primary objective is to install solar PV panels on public sector buildings.

Launching a community share offer, SCEES raised £467,000 from 170 people, two thirds of whom were from the Swansea area. As a result, SCEES were able to deploy 360 kW of solar PV across 10 public sector buildings – 9 schools and 1 NHS care home.

The project won an award at the Green Energy Awards, largely down to their success in utilising both public and civic networks to develop and deliver the project. Around £500,000 of community benefit is being generated which will go towards supporting the poorest people in the Swansea area.

### 3.1.2. Structures

The most dominant form of business structure used by community energy groups was found to be Community Benefit Societies (BenComs) (47%). Co-operatives (Co-ops) (19%)<sup>8</sup> and Community Interest Companies (CIC) (13%) were found to be the second and third most popular options, respectively. The remaining business models include Charities, Limited Companies, as well as unregistered or unconstituted organisations.

This distribution is largely unchanged from 2016 and shows a continued preference for mission led, democratic, social enterprise structures. Structures such as BenComs and Co-ops offer the capacity for community investment and for investors and members to actively engage in and influence projects. This focus on democracy is seen as an important underpinning to any community-led project.

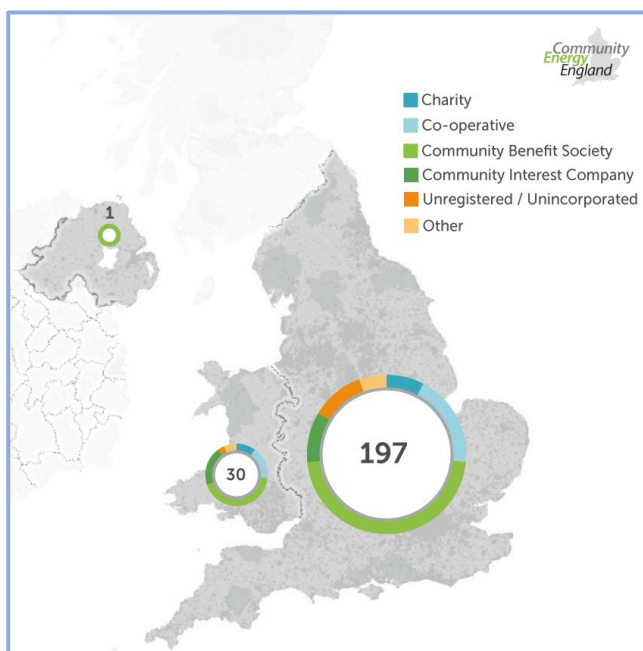


Figure 7 - Community energy business models by country

<sup>8</sup> Although the traditional co-operative model was used by the majority of early community energy groups, the refusal by the FCA to accept new registrations of community energy co-operatives has effectively stopped the formation of any new co-operatives since March 2014 and groups now have to use the community benefit model.





### 3.1.3. Networks

Local, regional and national networks are increasingly important in the community energy sector, as a means of seeking assistance, expertise, funding and partners. Over half of all respondents reported that they are either part of a community energy network or have affiliated partner organisations (54%).

Regional networks and affiliated organisations were found to offer more facilitative services, providing expertise, advice, technical support and, in some cases, funding for specific projects. A high number of these organisations and networks are found in the South and West of England, including Community Energy South and Regen. Fewer networks were found in the rest of the UK but include Datblygiadau Egni Gwledig C.B.C (DEG) in Wales and North West Community Energy Network in England. Several respondents also reported that they have received grant funding from affiliated community energy organisations in their network to both develop and finance energy projects.

### 3.2. Activities

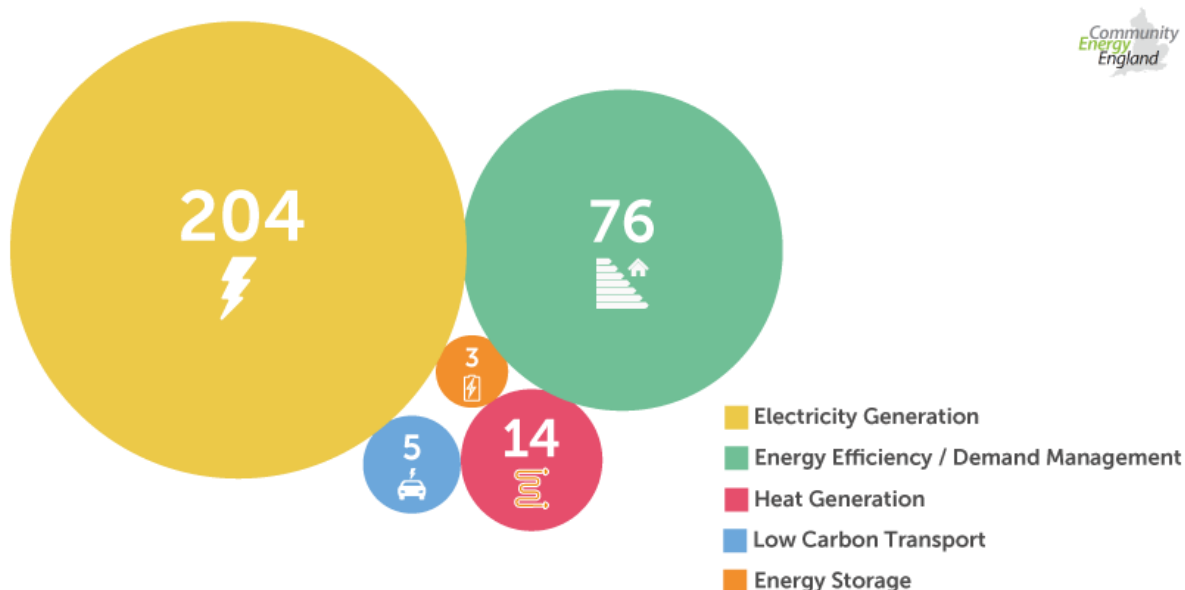


Figure 8 - Activities in the community energy sector 2017

This year's study identified 302 distinct projects<sup>9</sup> within 2017, with 16 new projects identified in 2017. The term project refers to particular community energy activities, including:

- ◆ Energy generation (204 projects)
- ◆ Heat generation (14 projects)
- ◆ Energy efficiency / Demand management (76 projects)
- ◆ Energy storage (3 projects)
- ◆ Low carbon transport (5 projects)

Projects have been classified as primary, secondary and tertiary to ensure the core initiatives of community groups are captured alongside any wider low carbon projects or aims. This is particularly

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<sup>9</sup> Includes all distinct active and in development projects, as reported by surveyed organisations. Projects may include aggregated initiatives (e.g. community-wide rooftop solar PV deployment).





relevant when discussing energy efficiency / demand management, where half of the 76 reported projects are considered secondary to, or are financially supported by, energy generation projects.

Low carbon transport was also reported as a secondary activity by all 5 groups, most often as part of integrated energy systems, including solar PV and / or battery storage.

### 3.2.1. Electricity Generation

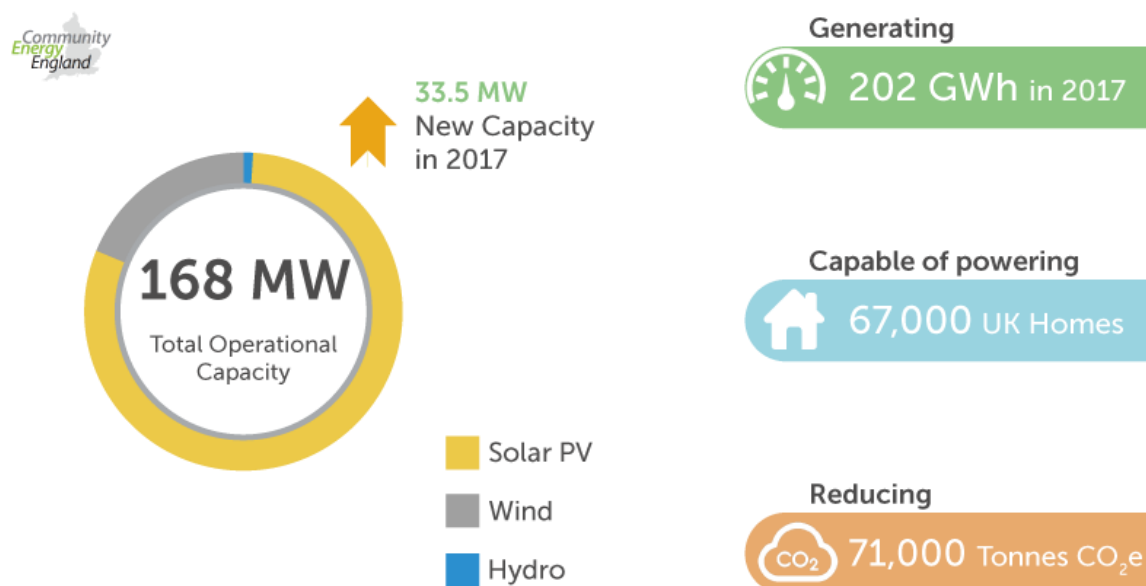


Figure 9 - Electricity generation in the community energy sector 2017

This year's study identified 168 MW of community owned electricity generation capacity across England, Wales and Northern Ireland. This is an increase of 47 MW on last year's report and includes 33.5 MW of new generation capacity installed or acquired in 2017. This equates to a growth in community energy capacity of 25% in 2017. New generation capacity in 2017 has been dominated by the purchase of existing generation assets by communities, most often through partnerships or consortiums. This includes the 14.7 MW Drayton Manor solar farm (Heart of England Community Energy), a 5 MW solar farm at Newton Downs Farm (Yealm Community Energy) and the collaborative purchase of the 6.9 MW Mean Moor wind farm by the High Winds Energy Society, Baywind Energy and Energy Prospects.

The remaining 13.5 MW of identified generation capacity was installed prior to 2017 but was not identified in the last State of the Sector study.

Including the estimated 81 MW of Scottish community energy generation capacity, a total of 249 MW of electricity generation capacity can be attributed to the UK community energy sector.

In comparison to 2016, there has been a 31% drop in new community owned generation capacity<sup>10</sup> and 30 fewer projects became operational. Of the new capacity installed or acquired in 2017, the

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<sup>10</sup> 48.5 MW installed in 2016 across 40 projects



purchase of 2 existing solar meadows and a wind development dominate (26.6 MW), with the rest comprised of small and medium scale wind, solar PV and hydro (6.9 MW).

In total 157 operational electricity generation projects have now been identified<sup>11</sup>, across England, Wales and Northern Ireland, comprised of:

- ◆ 135.6 MW Solar PV;
- ◆ 30.5 MW Wind;
- ◆ 1.47 MW Hydro

The South of England has the greatest density of solar PV projects, made up of a variety of project types, including large solar meadows with over 5 MW generation capacity and aggregated small-scale installations on domestic, private and public buildings. Wind capacity is more often found in the West of the UK and includes several large capacity projects situated in Cumbria, Wales and the South West of England. Hydropower makes up a very small segment of the sector in terms of generation, composed of 15 separate projects between 30 – 300 kW in size.

#### High Winds Community Energy Society

The High Winds Community Energy Society is an Energy4All Co-operative, set up in 2014 to develop wind energy projects in the North West of England. High Winds successfully constructed a 2-turbine development near Ulverston, Cumbria in 2016, totalling 4.6 MW and generating over 11,000 MWh in 2017.

In 2017, High Winds, in partnership with fellow Energy4All co-operatives Baywind Energy and Energy Prospects, extended their energy ambitions with the purchase of the Mean Moor wind farm. Situated adjacent to their 2016 development, Mean Moor is comprised of three 2.3 MW turbines. The project brought together 3 established community energy organisations and highlights the benefits of mutual support and partnership within the sector. The project provides an example of community energy success through the purchase of existing projects, reducing the development burden on communities.

A further 35 projects were identified as in-development, including 3.4 MW of solar PV, 1.3 MW of wind and 1.3 MW of hydroelectric generation capacity. Of the groups developing projects, 21 intend to submit a planning application in 2018. These projects were generally found to be additional projects being developed by communities with existing generation capacity, such as further deployment of rooftop solar PV and diversification into new technologies (e.g. groups with existing wind projects investigating solar PV or hydro). 9 responding organisations stated that their primary project was still in development, all of which are planned solar PV projects.

Community renewable energy projects generated over 202 GWh of electricity in 2017, offsetting 71,000 tonnes CO<sub>2</sub>e<sup>12</sup> and providing enough energy to meet the annual electrical demand of 67,000 homes.

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<sup>11</sup> Includes aggregated installations (e.g. community wide domestic solar PV)

<sup>12</sup> See Appendix B – Methodology for calculations



Figure 10 shows how the community renewable sector has developed over the last decade, highlighting the early uptake of wind energy and a sharp rise in solar PV projects from 2010 onwards due to the introduction of the Feed-in Tariff (FiT). Building on evidence from the First Report, a slowdown in solar PV development from 2016 to 2017 can be seen, with new capacity dominated by large project purchases rather than newly installed capacity. A similar trend can be seen with wind energy, where new capacity is nearly entirely dominated by large project purchases and little in the way of installed capacity in 2017. Several groups stated that wind was no longer seen as a feasible option for their organisations. Further support and funding is needed to ensure this stagnation in new projects and newly installed capacity does not continue in the community energy sector and more generally within the UK renewables industry.

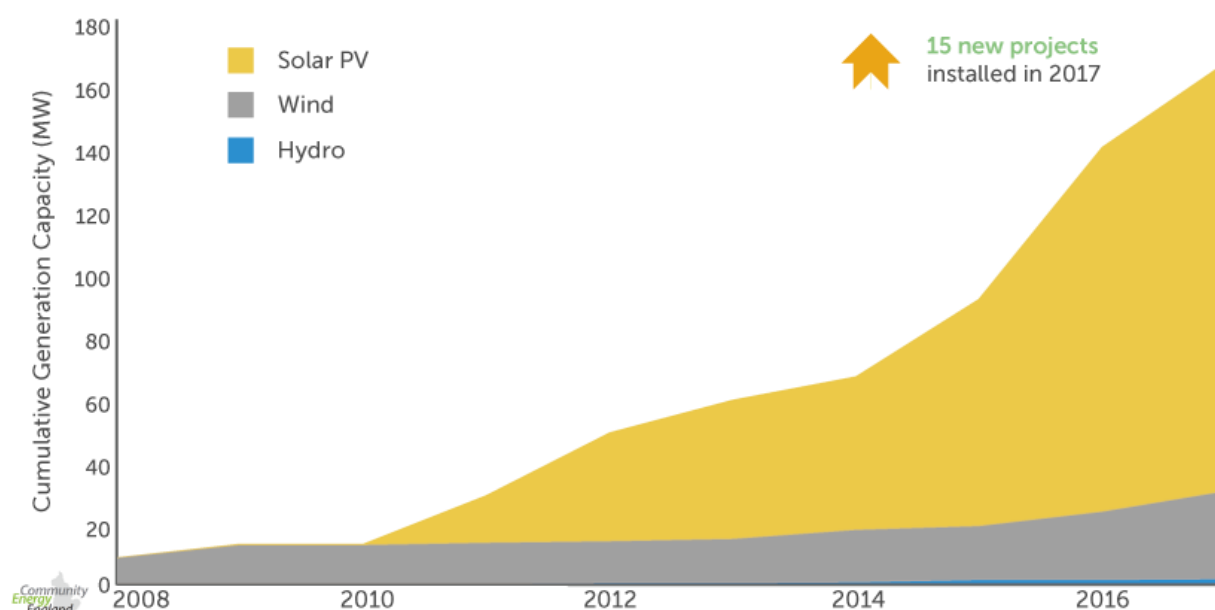


Figure 10 - Community owned electrical generation capacity since 2008



### 3.2.2. Heat Generation

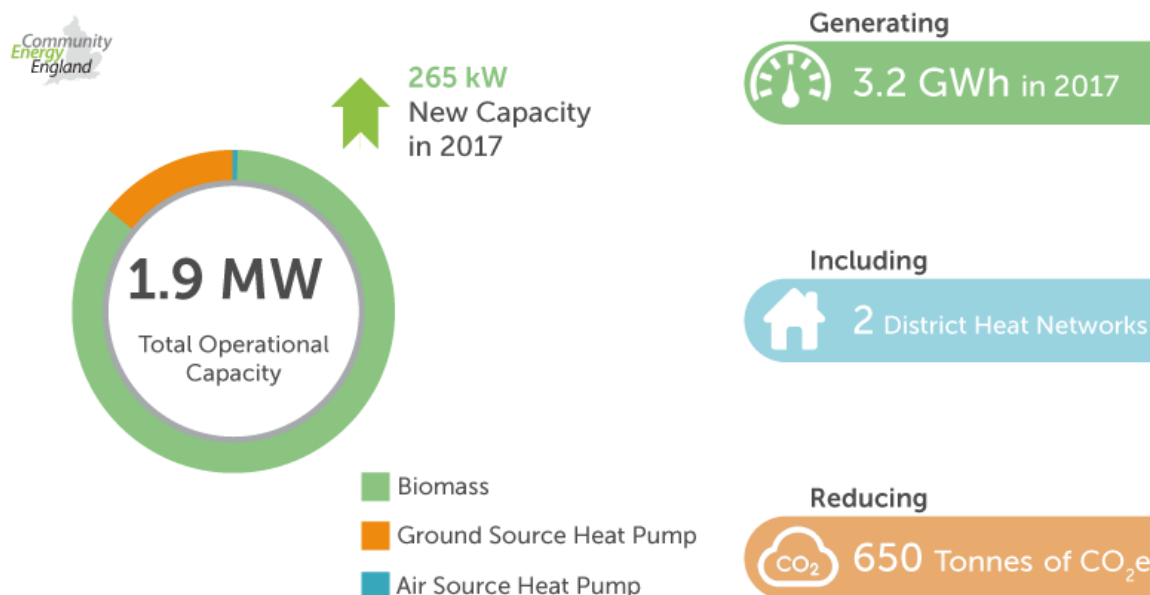


Figure 11 - Community owned heat generation in 2017

A total of 14 heat generation projects were identified within England, Wales and Northern Ireland. This included 9 operational and 5 in-development projects, with 1 project – a 265 kW ground source heat pump – successfully installed in 2017. In total, community led heat projects generated 3.2 GWh<sup>th</sup> in 2017 and offset an estimated 650 tonnes of CO<sub>2</sub>e.

In total, 1.9 MW of operational heat generation projects were identified, including 1.6 MW of biomass capacity and 0.275 MW across several heat pump and solar thermal projects. The dominance of biomass is reflected throughout the low carbon heat sector, as it offers a well-tested heat supply option, though uptake has still been extremely low in comparison to electricity generation technologies. This may be due to the difficulties in finding and securing sites and willing partners, especially as heat projects generally require a local “anchor” heat customer(s) with relatively large and consistent heat demand.

Two successful projects, including the ground source heat pump installed in 2017, have utilised district heat networks to link heat supply to multiple heat customers. District heat networks offer a means to link multiple demand centres in the search for project viability. The low number of projects such as this may be attributed to the higher costs of transmission infrastructure and increased complexity due to the greater number of heat customers. Furthermore, as heat generation is less deployed and considered more innovative, high risks and a lack of investment support (e.g. tax relief) have greater impacts on project viability.

A further 0.81 MW of biomass capacity was identified as in development, alongside 2 planned 0.3 MW anaerobic digestion projects, which would provide both heat and electricity. Respondents also stated that they are investigating innovative projects such as community-wide district heating, heat from waste projects and off-gas grid heat networks. One further organisation operated a community woodland and wood fuel supply project.





### 3.2.3. Energy Efficiency / Demand Management

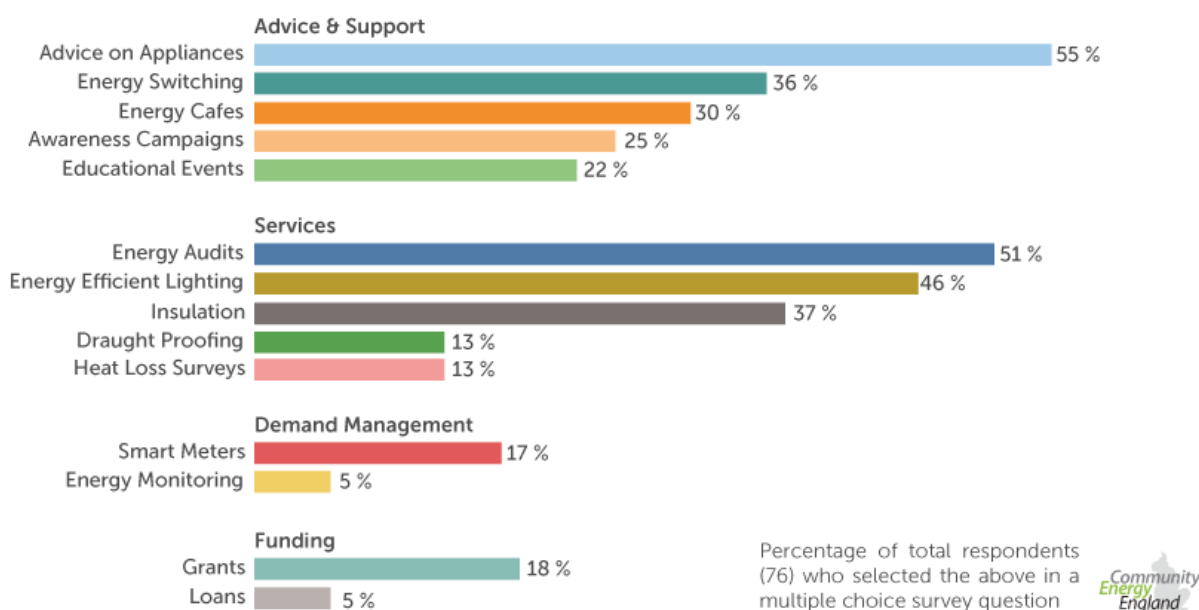


Figure 12 - Energy efficiency & demand management activities in 2017

Energy efficiency and demand management are an increasingly central part of community energy organisations' focus. Alongside local generation, they offer the potential for a low-cost route towards lower energy bills and better quality of life throughout the community (e.g. improved quality of heating).

Within this report, "energy efficiency" and "demand management" include any services which enable, facilitate or finance energy efficiency upgrades. This includes advice and support, services (e.g. energy audits), demand management (e.g. energy monitoring) or direct funding.

76 community organisations were identified as offering energy efficiency or demand management within their communities, engaging over 84,000 community members in 2017. Furthermore, nearly 1,000 separate actions involving energy efficiency upgrades were completed in 2017, including insulation improvements, heating upgrades and draught proofing.

Figure 12 shows the dominant energy efficiency support, services and funding offered by community organisations, with communities usually focusing on more than one energy efficiency or demand management intervention<sup>13</sup>. Energy audits (51%), provision of energy efficient lighting (46%) and Insulation (37%) were found to be the most common community interventions. This is likely due to the low cost and expertise required to carry out these tasks in comparison to the relatively immediate impact on energy bills and efficiency these interventions can have. More indirect approaches, including advice on energy efficient appliances (55%), energy cafes (30%), awareness campaigns (25%) and educational events (22%) were also shown to be popular initiatives due to their wide impact and relatively low costs. Fewer groups were found to engage with demand management (22%), which may be due to the need for greater technological and energy expertise.

<sup>13</sup> Respondents were able to select multiple answers. Figures refer to percentages of the 76 responding organisations selecting the specified option(s).



In terms of funding, organisations were found to prefer grants (18%) to loans (5%), due to the complexity and risk of managing loan agreements. Building on this, high management input and lack of reliable income may mean that communities often discount loans as a viable business model for fund distribution.

It is likely that the number and impact of energy efficiency groups in the UK is under-reported, as many groups are unincorporated or working on small scale projects and are therefore difficult to identify. Furthermore, groups engaged in energy efficiency often have interests throughout sustainability (e.g. the Transition Town movement) meaning energy efficiency may not be their core focus.

#### Carbon Co-op

Established in 2008, Carbon Co-op work with housing specialists and technical experts to deliver retrofitting services to homes in Greater Manchester and aim to help households make significant, large reductions in energy use.

They offer technical consultancy to allow members to retrofit energy efficiency measures or facilitate a 'DIY' approach through detailed training workshops. Carbon Co-op focus on a whole house approach and using open-source tools and bulk buying to make energy efficiency for members as cost effective as possible.

#### 3.2.4. Storage

5 battery storage projects were identified in this year's report, including 2 operational projects totalling 12 kWh and 80 kWh. A further 7.3 MW of storage is planned across 3 projects which intend to support existing solar PV installations and in 2 cases, integrate electric vehicle charging.

The highest profile project to date has been Energise Barnsley's domestic battery and solar project in 40 homes (see case study, below). Repower Balcombe have also installed 12 kWh of battery storage within a local school, alongside UK Power Networks, to reduce electricity bills and maximise solar energy use. Another interesting approach to battery storage has been Gwent Energy CIC, which offers and has successfully installed integrated solar systems in South Wales in 2017.

Several high-profile projects are set for completion in 2018, including Energise Barnsley's proposed addition of a 7 MWh storage installation, and 170 kWh of Tesla batteries to be installed in Spring 2018 by Bristol Energy Co-op.

It is clear that there is increasing interest in battery storage, most often as a means to maximise energy generation behind-the-meter and make local use of renewable energy more efficient. It is widely agreed that greater deployment and lower costs will eventually improve behind-the-meter viability and go some way to addressing intermittency issues associated with renewable technologies. Storage can provide the renewable energy sector with a degree of flexibility, including the opening up of different avenues of technology deployment (e.g. without subsidy support or in weak grid situations) and enabling new business models, including flexible grid export and network balancing.

Though it is a huge opportunity and an important technology to investigate in the search for project viability, storage projects are still considered high risk and high cost, including both the technology and associated infrastructure costs. Regulation uncertainty and limited available expertise due to its innovative nature are also considered limiting factors to storage deployment.



In comparison to the First Report, there have been several important storage trials in the community energy sector. There has also been an upsurge in the number of organisations investigating storage, particularly behind-the-meter. These trials, generally carried out by more established or ‘advanced’ community energy groups, will help to create the knowledge and expertise required in the sector to support future deployment as technology costs continue to fall.

#### Energise Barnsley

Energise Barnsley are involved in a residential 2-year solar and storage project with Barnsley Council, Northern Powergrid (District Network Operator) and Moixa (energy storage company) to investigate the potential of battery storage in mitigating the need for network reinforcement, and to test whether a community solar and storage model is feasible.

The project follows on from the ‘Barnsley Solar’ project, where 321 council-owned homes and 16 council buildings, including schools and sheltered housing blocks, received free solar PV panels, financed through a community bond and ethical investment from Charity Bank.

The project will utilise smart batteries, thermal stores and air source heat pumps to prove a domestic demand side response model, as part of a Department of Business, Energy and Industrial Strategy (BEIS) competition. It is also using the batteries and solar residential installations to pilot a peer-to-peer trading platform through the Ofgem Sandbox initiative. Energise Barnsley has also secured a connection for a 7 MWh standalone battery on council-owned land.

The projects continue to focus on those vulnerable to fuel poverty, to maximise the social economic benefits that come along with new innovations.

#### 3.2.5. Transport

Transport activities were found to be secondary to energy generation or efficiency projects. 5 projects were found to be operational, incorporating over 20 electric vehicle (EV) charging points and 5 community owned EVs.

These 5 projects had a focus on solar PV, with transport as a secondary activity. The organisations became involved in transport as a method to maximise solar PV usage due to intermittency issues, with the charging points and / or EVs acting as a storage medium for otherwise wasted energy. It is likely that a number of community energy groups within this study, as well as other organisations with low carbon interests, are participating in low carbon transport activities to some degree, but they have not reported on it as EV projects may constitute as their primary focus.

10 organisations stated an interest in community electric vehicles in their future plans, particularly as a car club service to community members.



### 3.3. Funding & Investment

2017 saw a reduction in the level of development funding and investment which community energy organisations have accessed. Recent policy and regulatory changes, as well as the early retraction of incentives and subsidies for community energy, have resulted in lower prospects and tighter margins for new renewable energy projects, thus reducing the number of organisations and projects seeking new funding and investment.

Within this section, “development funding” denotes funding for project or organisational development up to a viable stage (e.g. pre-feasibility up to financial close). “Project financing” denotes all investment after this point towards the costs of the project, including capital costs or other costs required to bring the project to the point of operation.

#### 3.3.1. Development Funding

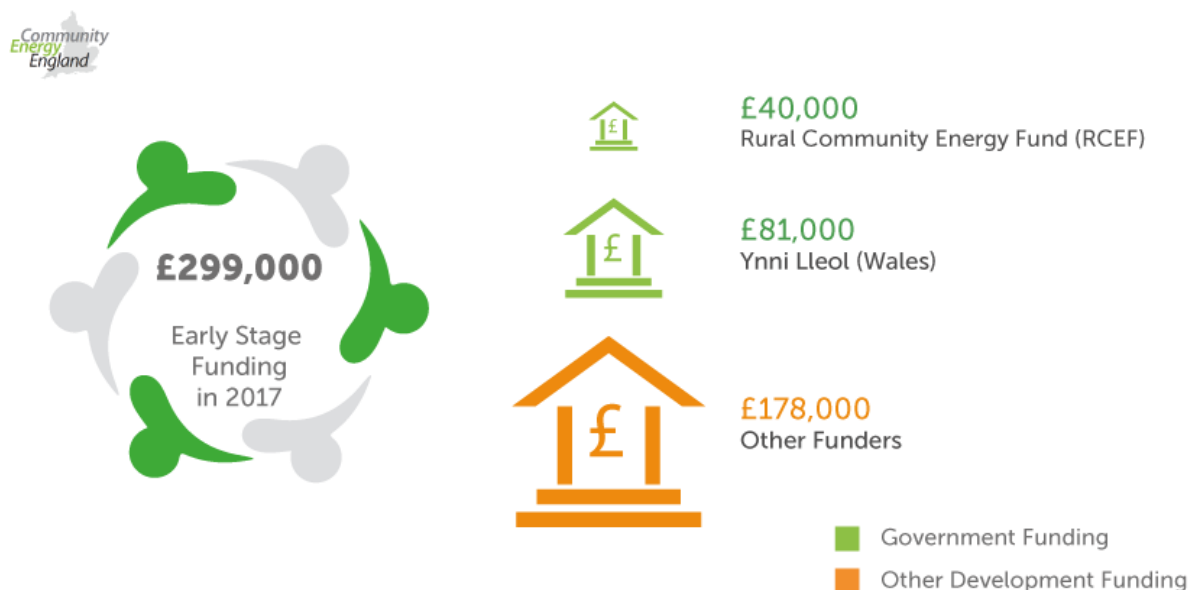


Figure 13 - Community energy development funding in 2017

Securing development funding is critical for communities who often lack the internal funding to conduct feasibility studies and develop projects. Without funding for feasibility studies, communities are unable to ascertain whether potential projects are feasible or worthwhile. Communities usually require outside expertise to guide them through this process and on to planning permission and financing stages, which is often not possible without early stage grant funding.

Current development funding streams available to communities include:

- ◆ Rural Community Energy Fund (RCEF) (England): a £15m fund to support rural communities to develop renewables in England
- ◆ Rural Community Development Fund (RCDF): to support community investment in small scale renewables and energy saving
- ◆ Ynni Lleol (Wales): a funding and support framework for local energy development in Wales administered by the Energy Saving Trust
- ◆ Local Authority support: including funding such as Greater London Authority's (GLA) Community Energy Fund



There are also a number of third party and regional / local supporting funds and organisations who provide project development funding to communities.

In 2017, only £299,000 of development funding was identified across 13 projects. Over 40% of this amount supported wind generation projects, with a further 12% used to support the delivery of over 5MW of solar PV installations. Development funding was found to be more accessible in Wales, with Ynni Lleol supporting organisations with £81,000 of funding in 2017, compared to the £40,000 provided by RCEF in England.

‘Other funders’ made up a much greater proportion of community energy development funding in 2017 when compared with nationally funded support programmes. These other funds include grants from affiliated community organisations, the Low Carbon Across the South East (LoCASE) programme, the Low Carbon Enterprise Fund (LCEF), the Robert Owen Community Banking Fund (ROCBF) and local authority funding.

The low value of external development funding accessed in 2017 is likely due to the lower number of projects conducted in 2017 and an inability to access suitable development funding due to the limited public funding sources. This is particularly relevant when discussing urban community energy, where access to development funding has become significantly more difficult since the closure of the Urban Community Energy Fund (UCEF) in 2015. Though 2017 has seen the introduction of several local authority level initiatives, including the Greater London Authority’s Community Energy Fund and similar initiatives in areas such as Islington and Camden, these funding sources are only available to groups within a certain geographic area. Increasing early stage funding at the local and regional scale may offer a suitable alternative to nationally managed programmes, though these types of initiatives are not currently widespread.

The increasing prevalence and variety of development funding sources is testament to the lack of government backed funding streams and highlights the complexity and level of knowledge required to acquire development funding. This is particularly true in England, as public funding through Ynni Lleol in Wales and the Community and Renewable Energy (CARES) programme in Scotland offer simple to access, centralised funding and expertise to communities. Impressively, some of the continued momentum in the sector is being funded by community energy groups with existing successful projects (e.g. Bristol Community Energy Fund, Bath & West Community Energy and Energy4All Co-operatives), who are supporting the activity of other groups.







### 3.3.2. Investment



Figure 14 - Community Energy investment in 2017

Project finance has become increasingly difficult to access throughout 2016/17, as the financial viability of many renewable energy projects has become more marginal in the face of recent policy changes. Access to finance was considered by respondents to be one of the most limiting barriers in the community energy sector during 2017. This is not attributed to communities' inability to raise finance, but rather to the very tight project margins seen across the renewables sector and the knock-on effect on returns on capital.

Alongside reduced financial viability, communities are considered as comparatively high risk by lenders and so often do not have access to suitable loan rates. To combat this, since 2010 community share offers have become an increasingly popular route to project financing. Share raises, as well as other forms of financing have also been negatively impacted by the removal of investment support and tax breaks on renewable energy projects, in particular the Enterprise Investment Scheme (EIS), Seed Enterprise Investment Scheme (SEIS) and Social Investment Tax Relief (SITR).

Just over £13.3m in project financing for renewable energy projects was reported as having been raised by community groups in 2017. Sector wide capital finance was found to have dropped by 68% between 2016 and 2017, reflecting the reduced number of projects in 2017 and a decrease in large capital investment projects. A further £1m was reported as being used for the financing of energy efficiency and demand management projects in 2017, 80% of which was made up of grants and 20% consisting of loans and self-funding.

Project financing was found to be dominated by loans (£6.8m) in 2017, primarily composed of the £6.2m loan used to fund part of Heart of England's recent acquisition of a 14.7 MW solar project. This was augmented by over £3.5m in bond/debenture financing, including £2.8m raised by Energy Prospects to support the purchase of the Mean Moor wind farm. Though lower than in previous years, community share raises provided a total of £2.9m in investment in 2017. Share raises have become more viable in recent years, as they minimise investment risk across aggregated individual investors. In addition, the sector has developed a wealth of experience and expertise in running offers, with organisations such as Energy4all, Ethex and Shareenergy refining the process. Share raises would offer



even greater potential for investment stimulation if they were coupled with investment incentives and/or tax breaks.

Solar PV was found to secure the greatest value of finance in 2017, which is reflected by its high deployment rate compared to other technologies. Wind energy raised the second greatest investment value in 2017, including £2.8m raised by Energy Prospects.

2017 Financing by Technology	
	Value
Biomass	£4,000
Electrical Storage	£300,000
Ground Source Heat Pump	£987,000
Hydro	£307,000
Solar PV	£8,437,000
Wind	£3,205,000
Electric Vehicles	£6,000
Energy Efficiency / Demand Management	£1,085,000
<b>Total</b>	<b>£11,531,000</b>

*Table 1 - Community energy finance by technology / activity type*

Though it is difficult to collect complete information relating to capital finance due to commercial sensitivity and the range and variety of financing methods, it is clear that 2017 has seen a distinct reduction in the level of finance raised for community renewables in the UK. This can be attributed to reduced project viability due to decreased margins and increased risks and has resulted in fewer projects coming forward than in previous years. Non-traditional financing routes, such as the 2017 projects financed through shorter term bond raises, have helped improve organisation's access to finance but still rely on projects which can achieve a worthwhile return on investment.

### Mongoose Energy

Mongoose Energy is the UK's largest community energy asset manager, working with community groups, commercial developers and investors to develop and operate community owned renewable energy projects. In 2017, this included managing the purchase of Drayton Moor solar farm in partnership with Heart of England Community Energy.

Mongoose strives to maximise the community benefit that projects generate by reducing costs – achieving economies of scale through aggregating its clients' needs - and increasing returns through improved PPAs, battery installation, technology optimisation and refinancing.

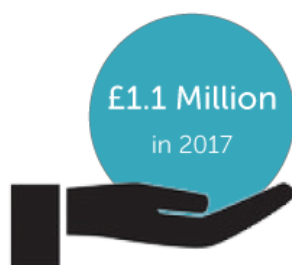
Mongoose also supports community fundraising, including securing commercial financing and preparing and marketing community share and bond offers on Mongoose Crowd. Mongoose is majority owned by its community energy clients.



### 3.4. Community Outcomes



Community Benefit Funding worth



Used for



Figure 15 - Community benefit funding and outcomes in 2017

Positive economic, social and environmental outcomes are the motivation for the majority of community energy projects. Economic benefits offer a simple means of measuring impact and include generation income, reduced energy bills and grant / loan funding. Wider benefits may take the form of environmental impacts, through carbon reduction or local environmental improvements, or social outcomes, such as job creation, community asset purchase and community education.

#### 3.4.1. Community Benefit Funding

In total, 83 organisations were found to have a Community Benefit Fund (CBF) set up to invest in a variety of community projects and initiatives. Across these organisations, a total of £1.1m in community benefit funding was allocated in 2017, most often through income from energy generation projects.

CBFs were found to vary greatly, with some larger and well-established organisations securing over £50,000, whilst nearly half of those surveyed secured under £10,000. This is due in part to some large generation projects becoming increasingly profitable as loans were paid off, loan rates reduced or projects refinanced at better rates. Smaller values are generally associated with earlier stage projects (i.e. limited CBF payments within the first few years of operation) or smaller, lower capacity generation projects.

It is worth noting that CBFs offer a simple, quantifiable means of recording economic benefits from community energy. Respondents were also eager to highlight more indirect economic benefits, such as reduced energy bills for community members, better community facilities (e.g. community business hubs) or improved relationships with public and private partners.



### 3.4.2. Environmental Benefits

Of the 98 organisations who responded to the question relating to their core motivations<sup>14</sup>, 47% reported environmental improvements as an important outcome from their project(s) and 33% stated CO<sub>2</sub> reduction as a core aim. This may include CO<sub>2</sub> reduction through their reported low carbon activities or wider investment in local environmental improvements (e.g. green spaces and buildings).

Through the 202 GWh of renewable electricity generated, it is calculated<sup>15</sup> that over 71,000 tonnes of CO<sub>2</sub> emissions (CO<sub>2</sub>e) were avoided and enough energy was generated to meet the annual energy demand of 67,000 homes. A further 650 tonnes of CO<sub>2</sub>e was calculated to have been avoided through community renewable heat generation.

Due to the difficulty in monitoring and calculating long term CO<sub>2</sub>e savings from energy efficiency, demand management, storage and transport projects, it is likely that the community energy sector provides greater carbon reduction than reported above.

Further environmental benefits may also be realised through improved environmental awareness in the community as a result of community energy activities. This may have been achieved directly through subsidiary projects (e.g. education initiatives or energy efficiency programmes) or indirectly through publicity and discussions surrounding an organisations' low carbon project(s) and plans (e.g. community meetings or forums).

### 3.4.3. Wider Benefits

Of the wider benefits reported by the 98 responding community organisations, education initiatives and awareness raising were seen as a central community outcome by 58% of respondents. Respondents stated that these types of initiatives were relatively low cost and high impact, as they helped to drive low carbon behaviour change and environmental understanding throughout a large portion of their communities.

Investment in community assets was seen as an important focus by 43 % of respondents, with several stating that asset purchase, such as a community hall or hub, was the primary motivation for their project. Alongside this, respondents often stated an interest in developing and supporting local services (36%), including business hubs, energy advice and auditing, local youth groups, charities and social care organisations. Two respondents also noted that they reinvested some of their income in international projects, including a low carbon energy project in Malawi.

In terms of funding, 46% of organisations stated that they offered grants or donations to outside organisations and individuals. Very few organisations were found to have offered loans in 2017, with one respondent citing loan management and risk as a barrier. Funding was found to be offered to a variety of local people, services and businesses, including operating or planned community business spaces (e.g. hot desk offices), match funding energy efficiency or heating upgrades and funding domestic renewables.

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<sup>14</sup> 73 organisations did not respond to survey questions regarding core motivations, a further 56 were not surveyed directly so data was not provided on core motivations

<sup>15</sup> See Appendix B – Methodology for full calculations



### Esk Energy

Esk Energy are a volunteer community organisation who successfully built and have run a 50kW hydropower generator on the River Esk in North Yorkshire since 2012. They are heavily focused on the wider social benefits that can be obtained through local community involvement and education.

They developed online e-learning modules as part of a community energy peer mentoring project to assist others develop community energy projects. Working closely with a local school they developed Key Stage 2 resources and collaborate with universities to support undergraduate and postgraduate projects in maths, engineering and environmental sciences. Esk Energy also provide site tours for schools and local groups interested in community energy.

Job creation was seen as an important focus by 28% of respondents. As community energy organisations often do not require a large number of core staff, several respondents noted that supporting local businesses provided a more suitable catalyst for increasing local employment.

Communities were also found to invest funds between themselves, as part of share offers, loans or donations between groups. This included donations for feasibility studies up to direct project financing, showing that the community energy sector benefits from a large amount of mutual support and internal sectoral investment.



## 4 The Geography of UK Community Energy

Community energy in the UK is influenced greatly by geography due to factors such as, but not limited to, resource availability, differing levels of local and state support, access to expertise and finance, and support networks. This is especially true between England, Wales, Northern Ireland and Scotland, where country specific community energy frameworks, policy, support bodies and funding streams can make a huge difference to the success of community energy initiatives.

This variation can also be seen at a regional level, where differences in local authority support, planning processes, grid availability, local expertise and funding streams can impact greatly on project success.

### 4.1. Organisations

Community energy organisations were found to be most prevalent in the South of England (94), in particular the South West of the country, with a moderate number of organisations found in the Midlands (35) and North (33) of England. Interestingly, far fewer organisations were found in the East of the country, an affect which may be related to a several factors already mentioned, including resource availability, local authority support and the pre-existing expertise of community networks or supporting organisations (e.g. umbrella organisations). This may change in the coming year, as efforts are currently underway to establish a support network for existing and aspiring groups across several of these regions.

14 organisations were identified within London, which is a considerably lower number per capita than elsewhere in the country. Groups within London are closely linked, either as part of a community energy network or under an umbrella organisation, such as Community Energy London. The lower number of constituted groups in the city may be due to a variety of reasons, such as tougher planning restrictions in urban environments. Barriers due to lack of funding support following the removal of the UCEF funding stream have been addressed in several areas, such as Greater London, where several local authority-led community energy funding initiatives were launched in 2017. It seems likely that, as renewable projects are increasingly considered behind-the-meter, deployment in cities will form an increasing proportion of the sector, particularly in terms of community-led solar PV.

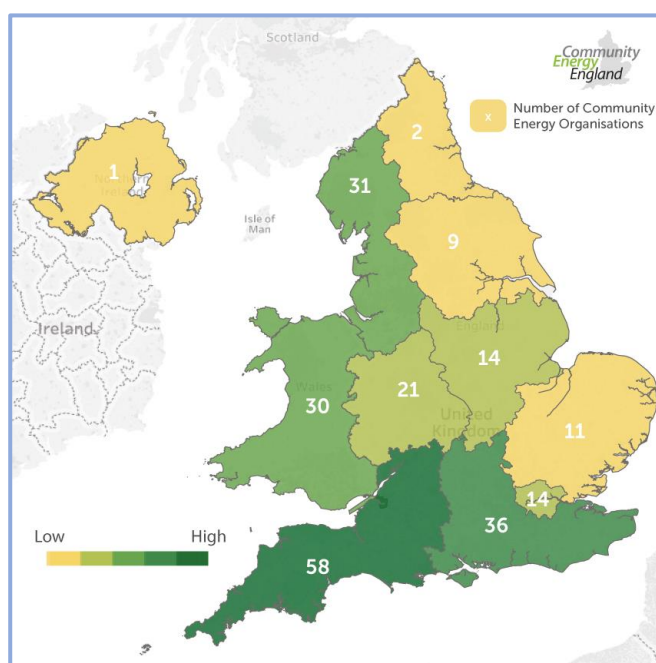


Figure 16 - Distribution of community energy organisations in the UK

In Wales, similar to England and in line with population distribution, the greatest number of organisations were found in South Wales (17) in comparison to Mid (5) and North Wales (8). Wales has the greatest number of community energy organisations per capita, which may be due to comparatively large and accessible resources in both hydropower and wind as well as better public





support for energy related activities through the Ynni Lleol framework and funding streams. Only 1 community energy organisation within Northern Ireland responded as part of this year's report.

In comparison to the national focus of umbrella organisations, community energy networks were found to have a greater impact at the regional level, including loose networks, such as the North West Community Energy Network. These initiatives provide a forum and source of knowledge and expertise within specific regions of the UK. In the South, Community Energy South and Community Energy London were found to have the most affiliated organisations. An example of a recent development in terms of community energy networks has been the initiation of 'Zero West' by Bristol Energy Co-operative in late 2017. The initiative aims to accelerate the low carbon agenda in the West of England through joined-up working between communities, local authorities, developers and other supporting services. In Wales, Datblygiadau Egni Gwledig C.B.C (DEG) and the Wales Co-op centre were listed as active supporting community energy organisations, alongside Community Energy Wales.

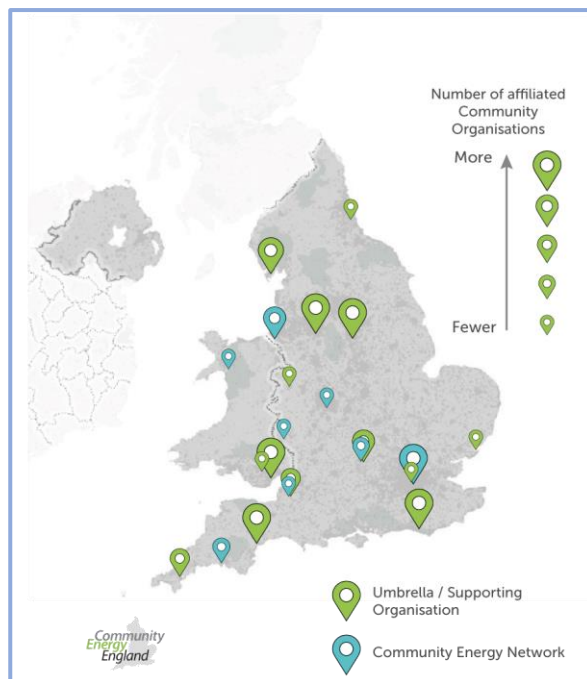


Figure 17 - Distribution of community energy networks and supporting organisations

#### Community Energy London (CEL)

Established in 2016 to support community energy groups in London, CEL aims to strengthen the community energy network in London. CEL aspires to raise the profile of community energy across London and improve overall coordination for delivering projects. This includes creating opportunities, keeping up with policy changes, promoting community energy to new stakeholders and building internal capacity by sharing information, skills and knowledge.

So far, CEL have produced a report of the State of the Sector in London, 'Realising the potential' and secured funding of £400,000 in the form of the GLA's London Community Energy Fund. CEL hold annual conferences and monthly meetings and regularly liaise with GLA and local authorities to explore future opportunities for community energy in London.



## 4.2. Activities

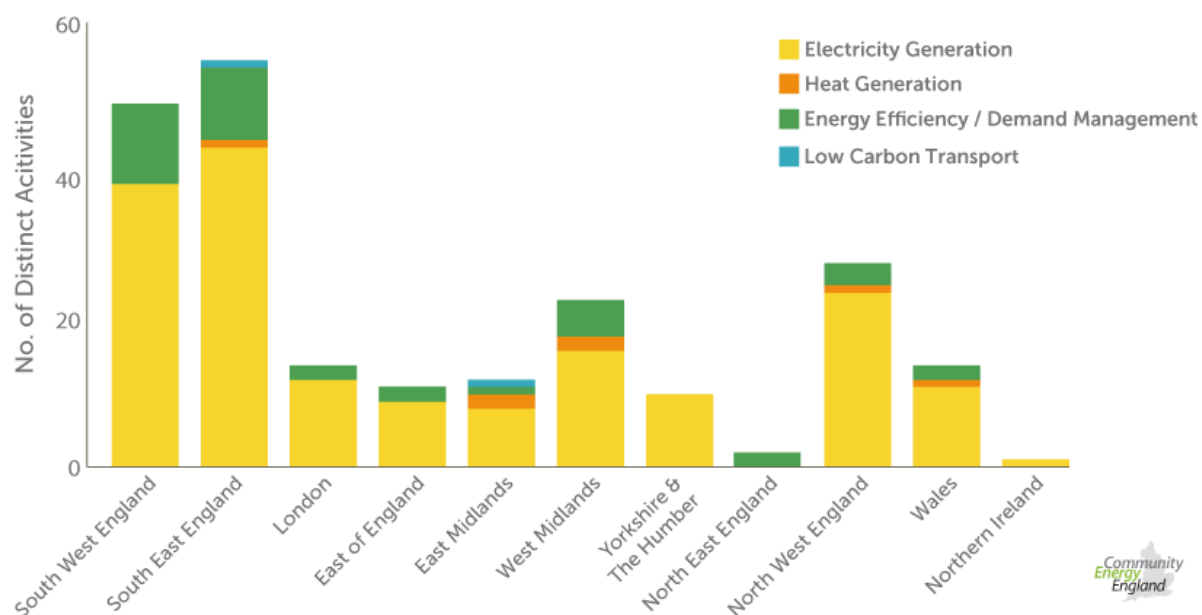


Figure 18 - Community energy activities by region

Figure 18 provides an overview of community energy organisations' focus by region, showing clearly that the South of England dominates in terms of total project numbers. Electricity generation projects are shown to form the greatest proportion of projects across most regions, with between 5 – 30% of projects within each region engaging in energy efficiency and / or demand management activities. The North East of England and Northern Ireland have the fewest projects, with no generation focused organisations in North East England identified within this study.

### 4.2.1. Electricity Generation

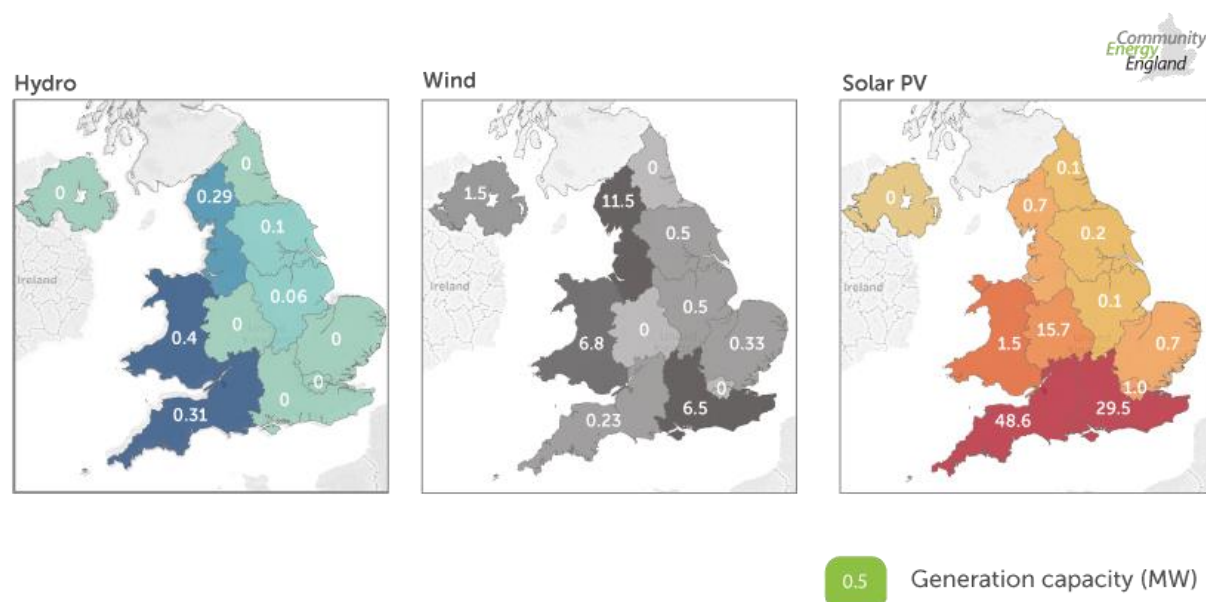


Figure 19 - Regional electricity generation by technology type

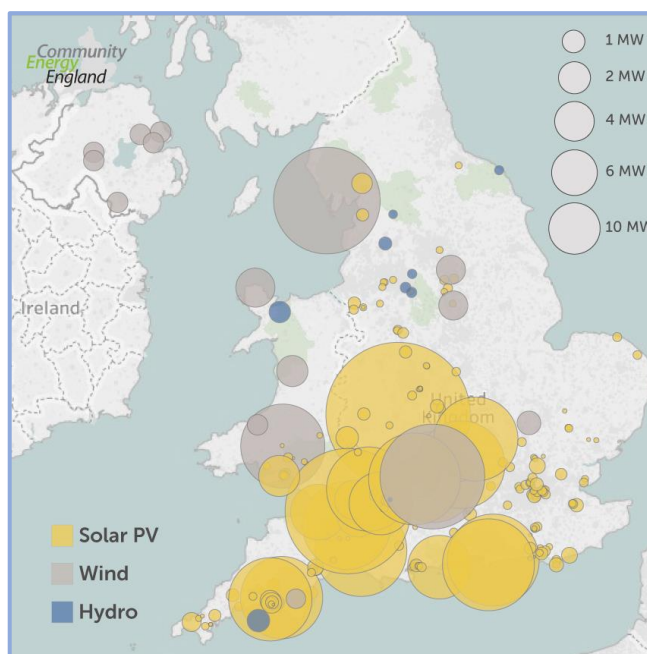
Energy generation follows a similar trend to the distributions so far discussed within this chapter, with the majority of generation situated in the South of England. Alongside resource availability, this





clustering of projects is likely due in part to the benefits of successful project development on local knowledge, expertise, motivation and finance in relation to community energy. This provides a solid basis for future projects and offers aspiring groups access to the resources and capacity necessary to take new community energy projects forwards.

Electricity generation is dominated by large scale solar of 5MW and greater, particularly across Cornwall, Devon, Somerset and Dorset. For example, the 9.3 MW Verdant Community Solar Farm near Weston-Super-Mare, purchased in 2016 by Communities for Renewables (CfR). Many of the larger projects have been supported by organisations similar to CfR, including recent projects by Mongoose Energy and the Low Carbon Hub. This access to professional expertise, support and funding has been beneficial to solar PV development in the local area, and in developing expertise within communities involved in these and similar projects. The study also identified a large amount of small scale solar, particularly in urban areas such as London, Bristol and Brighton. Centred around deployment of domestic, and occasionally public installations. These projects provide the dual benefits of energy bill savings for host individuals and organisations, whilst generating income for local community benefit.



*Figure 20 - Overview of electricity generation sites by technology type and project capacity*

Wind generation was found to be far more geographically dispersed. The largest projects are the Westmill Wind Farm (6.5 MW) in Wiltshire, the High Winds and Mean Moor Wind farms in Cumbria (11.5 MW) and Awel Co-op's Mynydd y Gwrhyd wind farm in South Wales (4.7 MW). A number of smaller wind projects were identified with capacities below 1 MW, including Drumlin Wind Coop's six 250 kW turbines across Northern Ireland and Four Winds Coop's two 500kW wind turbines in the Derbyshire and Yorkshire & the Humber. One notable exception this year is the Fenland Co-operative, after the community organisation sold its stake in a large wind farm, generating around £125,000 in community benefit and repaying the scheme's original investors with interest.

Hydro was found to be distributed mainly across Wales and Northern England, including a number of sub-100 kW schemes, such as Whitby Esk Energy, Saddleworth Community Hydro and Torrs Hydro. The largest scheme identified in England is Totnes Renewables Energy Society's (TRESOC) 300kW hydro project in Devon. A number of micro-hydro schemes were located in Wales, though the largest to date is Ynni Anafon Energy's 270 kW hydro project, which was installed in May 2017. Hydro projects necessitate steeper topography and adequate catchment areas. Early stage funding plays an important role in hydro projects, as projects were found to be entirely community led, rather than being developed as joint ventures. This is particularly true of successful hydro projects in Wales and can be seen in Scotland, where early stage project development funding is offered through Ynni Lleol and CARES, respectively.



### Communities for Renewables (CfR)

CfR is a Community Interest Company (CIC) that helps communities set up local energy enterprises and supports them to develop, finance and manage their own renewable energy generation. CfR has helped to deliver over £40 million of community solar PV in 10 localities ranging from school roofs to one of the largest community-owned solar farms in the UK.

Back in 2016 CfR managed the 'buy-back' of several MW-scale solar farms into local community ownership. These solar farms benefit from a 'split-FiT' which enables two projects up to 5MWp each to share a grid connection and benefit from a FiT – if at least one is community owned. The Ferry Farm (Selsey), Gawcott Fields (Buckingham) and Burnham and Weston Energy community solar projects are collectively expected to generate around £7 million community surplus over their lifetimes to support local community projects and help households struggling with fuel poverty. They are all owned by locally governed community companies and are financed by a community share or bond offer (alongside commercial finance).

#### 4.2.2. Heat Generation

The greatest heat generation capacity was found to be based in the Midlands and included Green Fox Energy's 800 kW biomass system in Leicestershire and Woolhope Woodheat's 200 kW project in Herefordshire. In the South, Springbok Wood Heat operates the largest heat network installation, incorporating two 199 kW biomass boilers as part of a district heat network. One project was identified in South Wales, where a 200 kW biomass system is being used to heat a local swimming pool. In general, very few heat generation projects were identified, making any reasonable geographic analysis difficult. With increasing support for renewable heating projects and an active subsidy through the RHI scheme, Groups that have successfully deployed projects could offer extremely beneficial advice and expertise to communities within their locality who are looking to develop their own heat projects in future.

#### 4.2.3. Energy Efficiency / Demand Management

The greatest number of energy efficiency projects were found to be located in the South West, in particular within Devon (9) and Cornwall (7). A similarly high number of energy efficiency projects were located in the South East of England, including a high proportion in Oxfordshire (5), supported by organisations such as Low Carbon Hub and Community Action Group (CAG) Oxfordshire. This high number of projects correlates with the number of energy generation projects within these regions, as communities take on energy efficiency work financed through income generated by existing generation projects. This was also seen in Wales, where all 5 reported projects were considered secondary to, or support by, energy generation projects. One notable exception is the Carbon Co-op, who offer retrofit energy efficiency services and training as their primary activity, with over 300 members in Greater Manchester.



## 5 Policy, Barriers & Success

### 5.1. Barriers in 2017

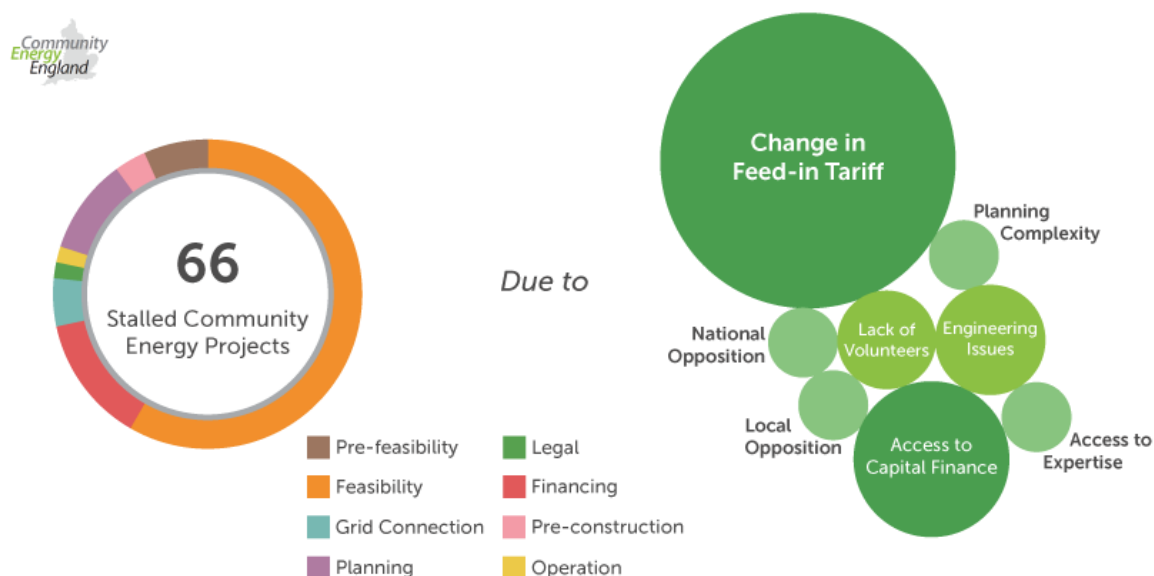


Figure 21 - Barriers to community energy in 2017

66 community organisations reported that they have projects that have either stalled or failed within the last 2 years. This is an increase of 30% over the findings from the First Report.

Dominated by electricity generation projects (80%), communities reported that projects most often stalled at the feasibility stage. The feasibility stage is the point at which initial investigation of barriers will be conducted, including resource assessments, grid applications, planning assessments and financial modelling.

As shown in Figure 21, the greatest barrier experienced by community groups in 2017 has been the reduction of subsidy support, in particular the Feed-in Tariff (55%). This is clear evidence of the negative impacts that the premature and abrupt subsidy cuts of 2015 have had on the community energy sector. This is of particular importance as community projects have been shown to have narrower margins than those led by developers, meaning that reduced returns are hitting community energy groups harder. Barriers were also found at the point of project financing (12%). Financing is a critical issue for communities, as projects become higher risk and returns on investment are less. Organisations also reported barriers during the planning process (9%) and a number of communities called for a review of the planning process due to its complexity and lack of transparency and certainty of outcome. Planning issues particularly disadvantage community groups as they are often centred on a particular geographical area and therefore have limited scope for suitable project sites.

Access to suitable project sites was cited as a further barrier to community energy project development (14%). Dedicated community energy groups rarely own or control any building assets of their own. In this sense, community energy as an opportunity for partnership between public, private and community organisations offers great potential for mutual benefit. There are many good examples of this to date, particularly in relation to rooftop solar, including NHS hospitals, local authority buildings, schools, warehouses and retail outlets. Another advantage of rooftop solar is that it does not usually require the uncertainty and cost of gaining a planning consent as most rooftop



installations fall within permitted development rights. Domestic properties have proved a harder area for community groups to engage with, possibly due to the difficulty of securing community buy-in to install large numbers of systems of domestic properties in a co-ordinated, and therefore economic, fashion.

#### Four Winds Energy Co-operative

The Four Winds Energy Co-operative put forward three similar 500 kW wind turbine projects in Yorkshire and Derbyshire. Two of these projects are now built and operating under community ownership and generating significant community benefit in former mining communities.

The third project was being considered by the Local Planning Authority just as the Written Ministerial Statement (WMS) of June 2015, changing the planning regime for onshore wind, was issued. This created difficulties for the planning authority because it was not clear how the WMS should be applied due to its ambiguity and lack of additional guidance.

Once the LPA had sought legal advice and come to a view on the issue, further delays occurred, due to matters in the local community which had to be resolved, elections and personnel changes. Planning consent was finally granted 3 years after the application was originally made.

By the time consent was granted the limited FiT pot for the type and scale of project was exhausted. Furthermore, even if subsidies had been available, the level of FiT was so low that the project was not financially feasible and could no longer be developed.

This has cost the communities involved tens of thousands of pounds and means that a deprived former mining community will lose the benefit of significant future community benefit.

More technical constraints, such as issues with grid costs and complexity (8%), and social aspects, including volunteer motivation (8%) were also cited by communities as key reasons for projects stalling or failing.

Specific examples of barriers to community energy development in the last year have included:

- ◆ Lack of public sector interest in collaborative approaches to solar PV on public buildings
- ◆ Local authorities delaying or holding up the development process (e.g. planning permission)
- ◆ Lack of viability due to low FiTs in combination with requirements to establish community benefit fund
- ◆ Lack of access to grid due to larger developments within the local area or outbidding
- ◆ Lack of access to project management and delivery expertise

One increasing trend that is expected to continue through 2018 and onward is the 'joining up' of community energy initiatives and organisations. In particular, increasing amalgamation of groups either within localities or as part of wider regional or national initiatives is expected. This has already been seen in 2017, with a number of respondents from the First Report reporting their amalgamation into organisations, such as the Low Carbon Hub in Oxfordshire. This amalgamation gives communities access to the project management and delivery expertise referenced above, as well as providing opportunities for collaboration between communities, especially on larger projects which may offer benefits to multiple partners.





## 5.2. Success & Innovation

In spite of the barriers noted in the previous section, and in line with the findings from the First Report, there is a high level of resilience within the community energy sector and a definite motivation throughout to continue to deliver innovative community-led low carbon energy projects.

Innovation within the energy sector comes in a variety of forms, including innovative technologies, business models, partnerships approaches, and more holistic approaches to energy development (e.g. local energy planning).

The most notable and referenced innovative technology was found to be battery storage, often in integration with existing or planned solar PV installations and electric vehicles. Battery storage offers benefits to behind-the-meter systems, as they allow for offset energy use, even when the sun is not shining. By integrating systems with electric vehicles, communities may also provide a service to the building occupant or to the wider community through car clubs. With storage costs falling, storage at the domestic and community scale is an important area of investigation, with several communities referencing developments such as the Tesla Powerwall in their future plans.

Communities' investigation of storage options mirrors the wider agenda in the energy sector, where there is an ever-increasing focus on flexibility in the energy system through storage, balancing and demand management technologies. This technological flexibility also provides increased flexibility within business models, where storage may enhance traditional renewable energy projects by improving project impacts and margins. To date, battery projects have been undertaken only by more established community energy organisations and are still considered high risk due to their innovative nature, both technologically and due to the complexity of associated business models. One example of this has been Isle of Wight Energy's recent issues with their local network operator, where requirements to treat storage as both a generator and consumer limits any deployment due to local grid constraints. Though a challenging area, current uncertainty relating to traditional revenue streams means that further studies and trials relating to battery storage would be of benefit to the sector and may help define a route to the deployment of viable systems in future.

### Schools' Energy Cooperative

Founded in 2014, The Schools' Energy Co-operative (SEC) has installed 1.475MW across 36 schools stretching from Middlesbrough to Bournemouth. It is now in discussions with over 30 further schools. SEC's mission is to install solar arrays on schools by utilising an alternative model to the prevailing commercial rent-a-roof or leasing models. Schools get electricity at a fixed rate for the duration of the Feed-in Tariff (FiT), after which the solar panels are gifted to the school. SEC members are paid a return of around 5% with the remaining surplus distributed to Schools or used to support new installations.

It is anticipated few prospective installations will be financially viable once the FiT ends in March 2019. However, SEC will seek to develop its existing LED lighting model to relight schools with energy efficient lighting.

SEC recognises the importance of cross sector collaboration and works with local community energy groups and local authorities, multi-academy trusts, school building surveyors and roof manufacturers to help schools realise the benefits of solar PV installations.



Increasingly, communities are searching for innovative approaches to reduce risk and gain access to sites and properties for energy development. This has included greater engagement and investigation of community installed solar PV on public buildings, such as schools and hospitals. This type of model allows the community group to retain community benefit revenue, whilst concurrently reducing the energy bills for the project partner(s). Other innovative approaches include recent purchases of existing generation projects (e.g. solar farms) by communities, often in partnership with supporting investment organisations. 2017 saw a number of examples of this, including Mongoose Energy's purchase of the 14.7 MW Drayton Manor solar farm, to be transitioned into the ownership of 3 separate community organisations in the local area. Another example has been Power to Change's Community-Owned Renewable Energy Partners (CORE) initiative. Financed through Big Society Capital and the Big Lottery Fund, the partnership purchased a 5 MW solar farm near Plymouth, recently transitioning the project into the hands of Yealm Community Energy. The solar farm will provide an income of over £1.4m for the local community over its lifetime, with CORE planning a further 6 – 8 further purchases in 2018.

Projects, such as those initiated by Mongoose Energy and CORE, utilise an important and increasingly popular model of purchasing existing assets, rather than relying on the traditional approach of communities developing projects from scratch. This model both reduces burden and necessary capacity (e.g. expertise and finance raising capability) on the community side, whilst achieving rapid and large-scale successes and the securing of community benefits. In line with the majority of community renewable capacity acquired in 2017, it is likely that this form of large site purchase alongside umbrella organisations and / or commercial partners will continue to provide community energy successes through 2018.

More holistic and technological approaches to energy generation, storage and use are increasingly being used to understand the best low carbon options for a given locality. This has included the designing of local energy plans, which take into account local needs (e.g. energy demand, local services, etc) and resources (e.g. hydro resource, housing stock) to deploy a variety of technologies and implement mutually beneficial programmes, such as insulation upgrades alongside district heating.

#### Energy Local

With its pioneering project in Bethesda, North Wales, Energy Local is leading the way in innovative approaches to local energy supply. While most renewable generators sell their electricity for 5-6p/kWh and retail customers pay up to three times that price, there is significant scope for local generators and customers to 'match' their supply and demand at a price (7p/kWh in Bethesda) that provides higher revenues for the generator and cost savings for local customers.

Working with Co-operative Energy and using the existing grid infrastructure and 'advanced' meters, local hydro generation is allocated fairly between members of the Club. At times when the local generation is insufficient to match the needs of the Club, it is topped up using a Time of Use tariff, which sets different prices for different time of day. In this way, Club members can move their consumption to times when local generation is more plentiful and electricity cheaper.



Localising the energy system has also become a focus in a technological sense, as communities and organisations seek to link local generation and use. Often limited by expensive and stringent regulations associated with energy supply, investigation into virtual private networks and peer-to-peer trading is ongoing in a number of communities throughout the UK, as they look to provide a simpler and more cost-effective means of localising energy generation and usage. Through these technologies, communities may be able to both better finance installations (e.g. through direct power purchase agreements (PPA)) and provide energy bill reductions within the community.

## 6 Future Outlook

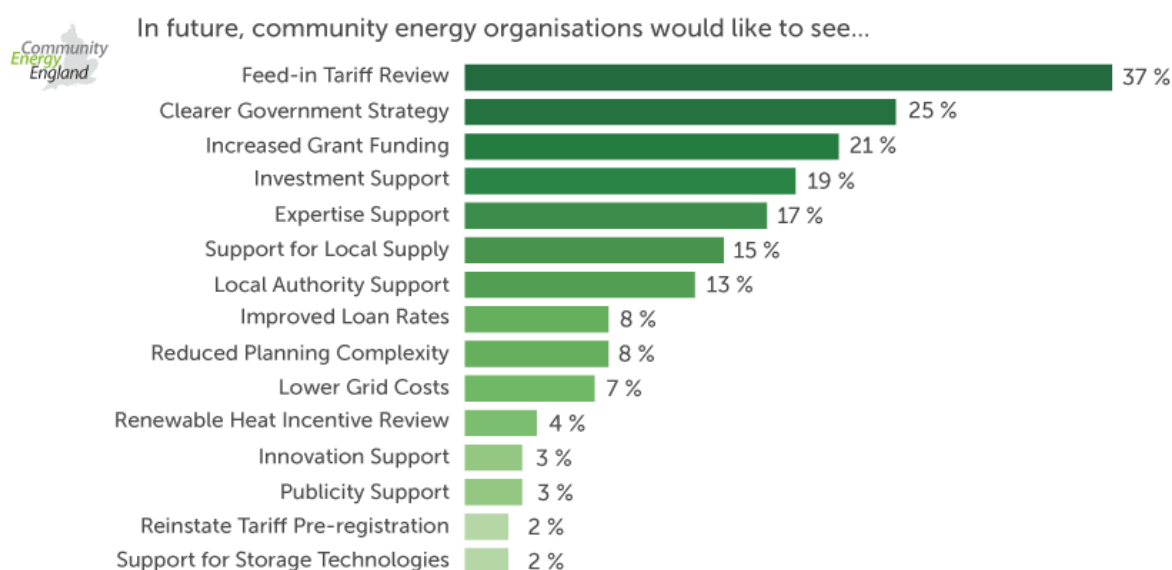


Figure 22 - Future support for community energy

Organisations were found to have strong opinions on the future of the sector, with 121 respondents providing details on future support they would like to see for community renewables. Communities responded vehemently on the topic of the Feed-in Tariff (37%) suggesting that it should be reviewed, reinstated or replaced. Several respondents noted the high level of subsidy offered at the start of the FiT but felt that the extreme and unprecedented cuts in 2015 were unreasonable and increased uncertainty throughout the sector to the detriment of communities, amongst others.

A more overarching response to address this uncertainty was for a clearer government strategy (25%) alongside better grant provision for early stage funding (21%) and, at a more local scale, support from local authorities (13%). Clearer government strategy was more often called for by organisations based in England in comparison to Wales, where the Welsh government has set ambitious targets to achieve 1 GW of locally owned energy by 2030. Though featuring a broad definition of local ownership, as seen in Scotland, these targets and the commitment to retain value and benefits at the local level are unmatched within England and Northern Ireland.

Alongside a FiT review and in response to difficulties financing projects, communities called for better investment support (19%), improved loans rates (8%), lower grid costs (7%) and a review of the Renewable Heat Incentive (RHI) (4%)

Communities also highlighted the need for expert (17%) and publicity (3%) support for their organisations, as many organisations lack the in-house expertise and capacity. Mutual support from



other communities goes some way to addressing this and Community Energy England and Community Energy Wales are working to facilitate knowledge exchange and the sharing of good practice and resources, such as through the Community Energy Hub.

Lastly, groups called for support for innovative approaches to community energy, including local supply arrangements (15%) and storage technologies (2%).

The last 3 years have been an extremely unstable time for the community energy sector, with unexpected policy and support changes alongside rapid changes to low carbon energy technologies (e.g. battery storage, EV) and the appearance of new models for community energy.

Within this study, 52% of respondents stated that they intended to carry out low carbon or renewable energy activities into 2018 and beyond. This includes 10 MW of energy generation proposed across 17 organisations, a large number of groups who are interested in developing further solar PV and several innovative projects.

Fewer organisations have plans for hydro or wind energy generation projects. This is most likely due to the fact that solar can be viably deployed behind-the-meter, as well as the increasingly poor wind and hydro margins and, in the case of onshore wind, a particularly hostile planning environment (at least in England). Within solar PV development, most respondents stated an interest in working with community facilities and the public sector / local authorities as they lacked the sites to develop themselves. Organisations also stated an interest in a wide variety of energy efficiency and low carbon transport projects (see table 2).

2018 Planned Project Types	
	% of responding organisations (121)
Solar PV	41%
Hydro	9%
Energy efficiency	3%
EV charging	3%
Battery storage	2%
Insulation	2%
Wind	2%
District heat network	2%
Thermal imaging	2%
Biomass	1%
Carbon reduction	1%
Demand side reduction	1%
Solar thermal	1%

Table 2 - Planned community energy projects in 2018

Some examples of future projects include:

- ◆ Installation of 6 Tesla Powerwall 2 batteries within domestic properties
- ◆ Purchasing of an existing 5 MW solar meadow
- ◆ Development of a 5 MW solar farm
- ◆ A joint venture 300kW solar farm
- ◆ 6 MW of medium scale solar across 5 separate projects
- ◆ Research into flexibility in energy markets (funded by BEIS)
- ◆ District heating network feasibility and development
- ◆ Development of a community EV charging network



## 7 Conclusions

This report has reviewed the community energy sector in England, Wales and Northern Ireland during 2017, providing a snapshot of the state of the sector in 2017 and offering an insight into how the sector has developed over the last 12 months.

What is immediately clear is that the impacts of regulatory and subsidy changes during 2015 and onwards have had a negative impact on the community energy sector, in line with changes seen in the wider energy sector. Ever decreasing project margins, alongside wider barriers relating to site availability, planning and grid constraint issues, are resulting in an inability for many groups to get projects off the ground. Evidenced by the low numbers of new community energy organisations, projects, funding and finance in 2017, this report confirms the sectoral slowdown predicted in the first State of the Sector report.

Whilst project successes in 2017 have been low, there is continued motivation and passion within the sector to find new ways of realising local benefits through low carbon energy. Whether through new technologies, business models or partnership approaches, there is a desire to make low carbon energy projects work at the local level. Central to this future will be the continuation of early stage funding, such as Ynni Lleol, RCEF and local authority funding streams, as well as the sharing of knowledge, expertise, finance and services within community networks and through umbrella organisations. This is especially true in regard to more innovative approaches to community energy, where trialling of new approaches will improve sectoral capabilities and help to inform future best practice.

At present it seems likely that the slowdown in the sector will continue into 2018. Despite ongoing innovation, the greater risks and hurdles associated with such projects mean that the number of financially viable projects in 2017 has been low. Communities are calling for better support for renewable energy projects, as well as reduced barriers to project development. Critically, clearer and more supportive government strategy is required, with greater support at the regional and local levels from local authorities.

Improved policy support must be offered throughout the sector to improve project margins and viability and realise the benefits of local low carbon projects. Whether through financial interventions - including reviewed subsidies, investment incentives, innovative support and early stage funding - or through greater engagement with the community energy sector (e.g. local authority partnerships), the public sector must play a central role in enabling community energy. Improved strategies and support will allow communities to continue to develop their low carbon ideas to the benefit of local people and areas, whether through traditional routes or by establishing more innovative paths towards low carbon community development.



## Join Us

Community Energy England (CEE) and Community Energy Wales (CEW) are membership organisations established to provide a voice for the community energy sector in England and Wales respectively. CEE and CEW work closely together, as well as with other partners, to help to create the conditions within which community energy can flourish.

CEE and CEW advocate for supportive policies at regional and national levels, work to increase the profile of community energy, support the development of projects and encourage new entrants and collaboration with public and private sector organisations.

You can help CEE and CEW to succeed in their shared mission to support and accelerate the transition to a fair, low carbon and community-led energy system by joining them. Membership of CEE and / or CEW is inclusive and is open to any organisation that is committed to the development of the community energy sector in England, Wales and beyond.



[www.communityenergyengland.org](http://www.communityenergyengland.org)

[www.communityenergywales.org.uk](http://www.communityenergywales.org.uk)



Comm1nrg

CommEnergyWales



+44 (0)114 312 2248

+44 (0)292 019 0260



[info@communityenergyengland.org](mailto:info@communityenergyengland.org)

[info@communityenergywales.org.uk](mailto:info@communityenergywales.org.uk)



## Community Energy Hub

CEE manages the Community Energy Hub, a free to use, single point of access for information on community energy. It is designed at its core to be a platform where community energy groups can share information and resources amongst themselves and with other organisations, including potential funders or project partners.

**[hub.communityenergyengland.org](http://hub.communityenergyengland.org)**