COMMUNITY ENERGY

State of the Sector

2020

Sandford Hydro

Community Energy England

Cymunedol Cymru Community Energy Wales

SCENE

ABOUT US

Community Energy England and Community Energy Wales are not-for-profit organisations which represent and support the community energy sector across England, Wales and Northern Ireland. We do this through increasing public awareness of the activities and value of community energy organisations in England and Wales, building capacity within the sector, and advocating for policies to enable the sector to grow at both regional and national levels.

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THIS DOCUMENT

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DATA (Open Access)

The State of the Sector 2020 Report uses data collected between January and April 2020, relating to community energy in England, Wales and Northern Ireland. An open-access anonymised database of all non-sensitive data is available on request from Community Energy England. Please email data@communityenergyengland.org to request access.

Community Energy England and the State of the Sector project adheres to GDPR (2018) regulations.

SPONSORS

Foreword

Welcome to our fourth State of the Sector Report, highlighting community energy activity in 2019 across England, Wales and Northern Ireland. As ever, our sincere thanks go out to everyone who took the time to participate in our survey, as well as to Scene for producing this report.

2019 was a year of climate activism resulting in the UK parliament, Welsh Government, Northern Ireland Assembly, Scottish Government and many local authorities declaring climate emergencies. Community energy is surely one of the solutions to addressing this challenge and enabling communities to be directly involved in, and benefit from, the transition to zero carbon. Despite these positive moves, it was another challenging year for community energy, but it did also result in a broad range of innovations and social impact. It is clearer than ever that community energy is about far more than the generation of renewable energy. Community energy transforms local communities, tackles fuel poverty and isolation, empowers communities and delivers a whole host of broader environmental and social outcomes.

Whilst our survey findings show that the growth of new community energy projects continues to be slow, this report also highlights the role of community energy in driving both technological and social innovation. There will be no "one size fits all" model in the new energy system and community energy will be vital in ensuring that innovation is shared and that all communities can benefit from a fairer, cleaner and more resilient energy system. Community energy can help to identify the niche opportunities in local areas, it can help to build trust, encourage behaviour change and the adoption of new technologies. We need solutions that fit communities and that put people at the heart of the energy system.

As we publish this report, we are in the midst of another crisis, a pandemic which is causing devastating loss of life, destroying livelihoods and will have long-term implications for the way we live and work. The community energy sector has responded by directly supporting the communities they serve in their time of need. You can see on page 6 just some of the examples of how our sector has been helping to support communities. We all need to join together to not only provide this much needed immediate support, but also to ensure that our communities play a core role in responding to the climate and ecological crisis whilst ensuring a just transition where nobody is left behind.

Emma Bridge

Chief Executive

Community Energy England

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Business Development Manager

Community Energy Wales

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Community Energy Headlines

The energy sector is at a pivotal point in the low carbon energy transition, with a rapidly changing policy and support landscape expected to impact greatly on community energy in 2020. While the sector continues to show resilience in the face of change, the promise of growth shown a few years ago is at risk of becoming an increasingly distant prospect.

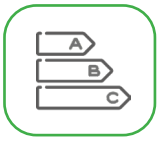
The closure of the Feed-in Tariff (FiT) scheme had a dramatic impact on community energy project development, making the most prominent existing business model unviable and creating a significant new challenge for community energy organisations to respond to when creating and implementing new projects.

In 2019, the community energy sector:

Included over **300** organisations owned and controlled by, or created for the benefit of, local communities.

Engaged over **90,000** local homes and businesses with the low carbon transition, supported by **263** full-time staff.

Installed **15.4 MW** of new electricity generation in England, Wales and Northern Ireland, taking the total community owned capacity in the UK to **264.9 MW**.



Engaged and supported **22,000** community members and **415** businesses to improve energy efficiency and reduce energy use.

Generated **£4.6m** in local economic benefit in 2019, including nearly **£2m** in grants and loans to support local people, community organisations, charities and SMEs.

Is continuing to innovate to overcome new barriers, developing projects with **new technologies, business models and through greater partnership working.**

ABOUT THIS DOCUMENT

The Community Energy - State of the Sector research project has provided in-depth understanding and analysis of the UK community energy sector since 2017. This report focuses on the changes, trends and challenges faced by low carbon communities in 2019.

Understanding the Sector

Building a comprehensive understanding of the community energy sector in the UK is essential in defining the role and influence communities can have in the future energy system. Community energy organisations play an important role in our response to the current climate emergency and are a driving force for low carbon energy development and innovation. In a year of changing policy and emerging opportunities, communities continue to demonstrate resilience. Improving understanding of, and developing new approaches to, community energy will be critical to the growth of the sector and its wide-ranging positive impacts.

Identifying Areas for Support

The annual State of the Sector report is designed to provide an ongoing understanding of community energy in the England, Wales and Northern Ireland, identifying key barriers and opportunities for community energy organisations into 2020. The evidence base provided in this report will be used to identify where facilitation and support is needed, creating a foundation for the advocacy work of Community Energy England and Community Energy Wales on behalf of the sector. Ultimately, this evidence will be used to influence a more supportive policy landscape for community energy at local, regional and national levels and will help remove barriers so the sector can fulfil its huge potential.

Data for Impact

Community Energy England and Community Energy Wales are committed to supporting wider research that benefits the community energy sector. The State of the Sector Report 2020 aims to reduce the research burden on community energy organisations, by providing a publicly accessible database for organisations and researchers seeking to further understand the sector. The annual research project and report is managed by Community Energy England and Community Energy Wales. The report forms a core part of both organisations' work, shaping their activities with members in 2020 to build capacity and grow the community energy movement.

About this Research

The data collection, analysis, and reporting were conducted by Scene between January and April 2020. Scene is a local energy specialist and social enterprise headquartered in Edinburgh, managing consultancy, research, and energy access projects across the UK, India, and sub-Saharan Africa. Scene has researched and produced the State of the Sector Report annually since 2017.

The State of the Sector 2020 report is sponsored by SP1 Energy Networks and has been developed alongside additional regional community energy research reports on behalf of distribution network operators (DNO), Electricity North West and Northern Powergrid.

Central to the success and value of this research are the contributions of community energy practitioners across England, Wales and Northern Ireland. A total of 163 community energy organisations responded to the 2020 State of the Sector survey, with previous survey data provided by a further 137 organisations and augmented through desk-based research. We are particularly thankful to Energy4All, Communities for Renewables, PURE Leapfrog, Community Energy London, Community Energy South and Regen, who have continued to support the impact of the State of the Sector report since its first publication in 2017.

Community Energy England

SCENE

Ynni Cymunedol Cymru Community Energy Wales

SP ENERGY NETWORKS

SP Energy Networks (SPEN) is the distribution and transmission network operator throughout Central and Southern Scotland, North Wales and North West England. SPEN plans to facilitate the decarbonisation objectives and choices of their customers and communities to support the journey to net carbon zero future.

electricity north west

Electricity North West Limited (ENWL) is the electricity distributor for the North West of England. ENWL own and operate the network which carries electricity from the national grid to 2.4 million premises and five million customers and, as generation becomes more local and widespread, around the network.

NORTHERN POWERGRID

Northern Powergrid is an energy network operator serving the North East of England. Northern Powergrid operate and maintain the electricity distribution network that delivers electricity to more than 3.8 million premises through the electricity distribution companies Northern Powergrid (Northeast) and Northern Powergrid (Yorkshire).

Coronavirus & Community Energy

Since March 2020, almost every sector in the UK has been affected by the unprecedented and ongoing COVID-19 pandemic, which has required radical and rapid changes in the way that business, governance and social life is conducted for the foreseeable future. The community energy sector has not been immune to the effects of the crisis and challenges are expected in the low carbon sector during 2020 and beyond.

Reporting

The State of the Sector 2020 Report presents information about the community energy sector prior to the COVID-19 outbreak, up to the end of 2019. As such, the data reported by community energy organisations does not include any analysis of impacts in 2020. However, the crisis has been included in our projections into 2020 and beyond, accounting for effects such as funding and project development delays and challenges.

Challenges

The community energy sector is undergoing a period of uncertain and rapid change. Added to the closure of the Feed-in Tariff in March 2020, the COVID-19 pandemic represents a greater challenge to the sector and at time of publication was already impacting projects, with community organisations unable to progress due to limitations on engagement and work practices. Representatives of the sector have been in conversation with regulators and funders at Ofgem and the Department for Business, Energy and Industrial Strategy (BEIS), requesting flexibility to FiT closures and deadlines, leading to The Feed-in Tariffs (Amendment) (Coronavirus) Order 2020, which gave small-scale renewable electricity generators additional time to apply for accreditation under the scheme.

A Rapid Response from the Sector

Despite the challenges, the community energy sector demonstrated its contribution to community resilience, adaptability and ability to provide support and funding quickly and directly to organisations and people within their communities. In the first week of the lockdown in March 2020, the Communities for Renewables (CfR) collective mobilised £100,000 of Corona Crisis Funds between them to support the most vulnerable in their communities. Six community-run solar farms in England and Wales supported by Community Owned Renewable Energy (CORE) Partners advanced a total of £195,000 in community benefit funds to support their local communities. Several community energy organisations such as Repowering, South London Community Energy (SELCE) and CREW Energy moved their fuel poverty advice services online or over the phone, working with other local community organisations to reach vulnerable members of their communities and help them access support and crisis funding.

The Demonstrable Value of Community Energy

It is often during moments of national crisis that we become most acutely aware of the sectors which contribute the greatest value to our communities and households. And, as demonstrated above, the challenges of COVID-19 have revealed the profound and much-needed contributions from the UK's community-led enterprises and initiatives, who responded rapidly to the needs of their communities and provided critical funding and social support. Above and beyond climate change mitigation, these recent months demonstrated the broader social and economic values of community energy, which should not be forgotten as we plan our zero-carbon landscape into the future.

A Year of Change

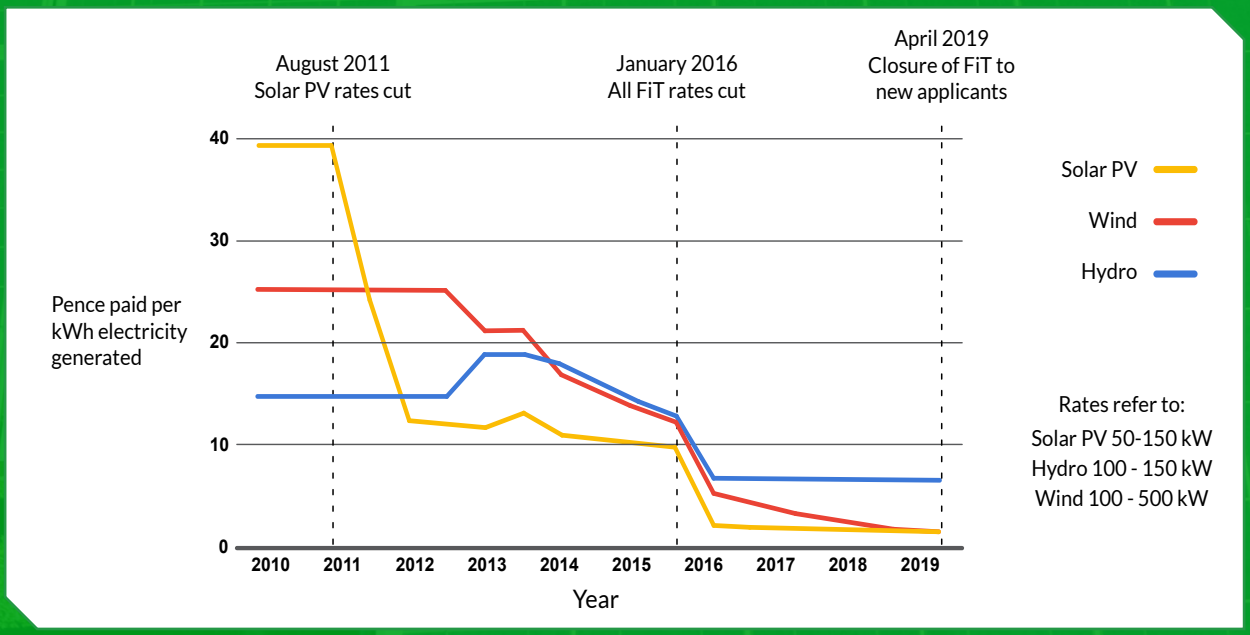
Changes to policy between 2016 - 2018 contributed to a significant overall decline in community energy activity. Over those two years, new electricity generation capacity decreased by over 80%, the value of annual investment into the sector dropped by almost 80% and the formation of new community energy organisations dropped by 81%.

The Feed-in Tariff

Launched in 2010, the UK Government's Feed-in Tariff (FiT) scheme provided income to small-to-medium scale electricity generators as a means of accelerating low carbon energy deployment. The FiT rates were significantly reduced in 2011 and 2015, beyond expected rates, before the scheduled closure of the scheme on 1st April 2020.

With the removal of the FiT scheme, there is no longer subsidy support for electricity generation at the local scales relevant to the community energy sector. A limited form of replacement - the Smart Export Guarantee (SEG) - came into force in January 2020, obligating electricity suppliers to offer a payment tariff to small-scale generators. The SEG does not provide guarantees on price or length of contract, limiting its value as a support mechanism due to low financial returns and greater uncertainty.

The financial case in support of many small-scale renewable projects will therefore be drastically diminished throughout 2020/21, whilst small and medium scale generators explore new business models, ownership schemes and technologies in order to ensure continued viability and social impact.



Feed-in Tariff rates for small to medium scale electricity generation from 2010 - 2019

Local Energy Hubs

In 2019, the UK Government's Department for Business, Energy and Industrial Strategy (BEIS) introduced a funding and support programme for the creation of a series of Local Energy Hubs in England. The hubs exist to scale up investment in local energy schemes, provide impartial technical advice, and encourage collaborations, innovation and new funding models as well as administering the newly relaunched Rural Community Energy Fund (RCEF).

Community Energy Research & Reporting

Several reports provided new insights into the UK's changing community energy sector in 2019, including Green Alliance's vision for the future of the community energy sector in Community Energy 2.0 and Regen's exploration of evolving business models and the growing need for energy flexibility in the future energy system in Power to Participate.

Further to this, the UK Energy Research Centre reflected on the UK's community energy future in Visions for the Future of Community Energy in the UK. In early 2020, Scottish Power Energy Networks and WPI Economics detailed The Future of Community Energy, exploring the potential and forward growth of the community energy sector in a changing energy system.

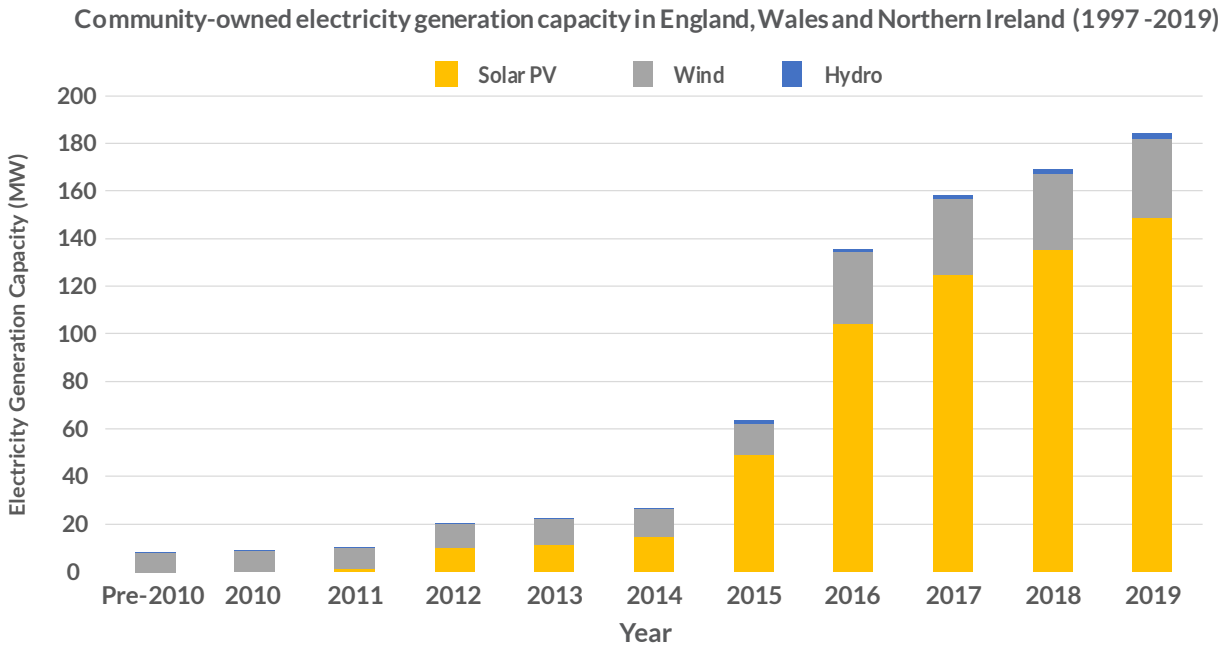
A New Landscape

In comparison to 2018, 2019 saw more community-owned electricity projects successfully installed. Dominated by solar PV, many of these projects were likely a result of a push by community organisations to install projects prior to the Feed-in Tariff deadline in March 2020.

Across 24 projects, 15.0 MW of new electricity generation was installed using the FiT scheme, with an additional 23 organisations planning to complete further projects – totalling just under 2 MW – before the March 2020 deadline. At the time of publication, there are a number of projects that sought preregistration under the FiT scheme prior to March 2020 and were continuing to develop projects in accordance with the Coronavirus Amendment Order, which extended FiT accreditation up until September 2020.

24
new electricity generation projects

15.0 MW
supported by the Feed-in Tariff in 2019



Whilst recent measures enabled the completion of a large number of subsidy-supported community energy schemes in 2020, 200 community survey respondents highlighted the removal of the Feed-in Tariff scheme as one of the greatest barriers facing the community energy sector in 2020. In place of the UK Government's Feed-in Tariffs, as of 1st January 2020, licensed electricity suppliers are now obligated to make payments to small-scale low carbon generators for electricity exported to the grid. This payment, known as the Smart Export Guarantee (SEG), is not set by the government but offered by the UK's electricity suppliers on an open market basis with no minimum price.

Community energy organisations have developed new and innovative approaches to project design in response to the closure of the Feed-in Tariff scheme and further challenges faced by the community energy sector. New technologies, emerging business models and a greater focus on partnership working, are expected to lead to new and positive opportunities for the community energy sector.

Greater Manchester Community Renewables (GMCR)

Repowering - Lambeth Community Solar

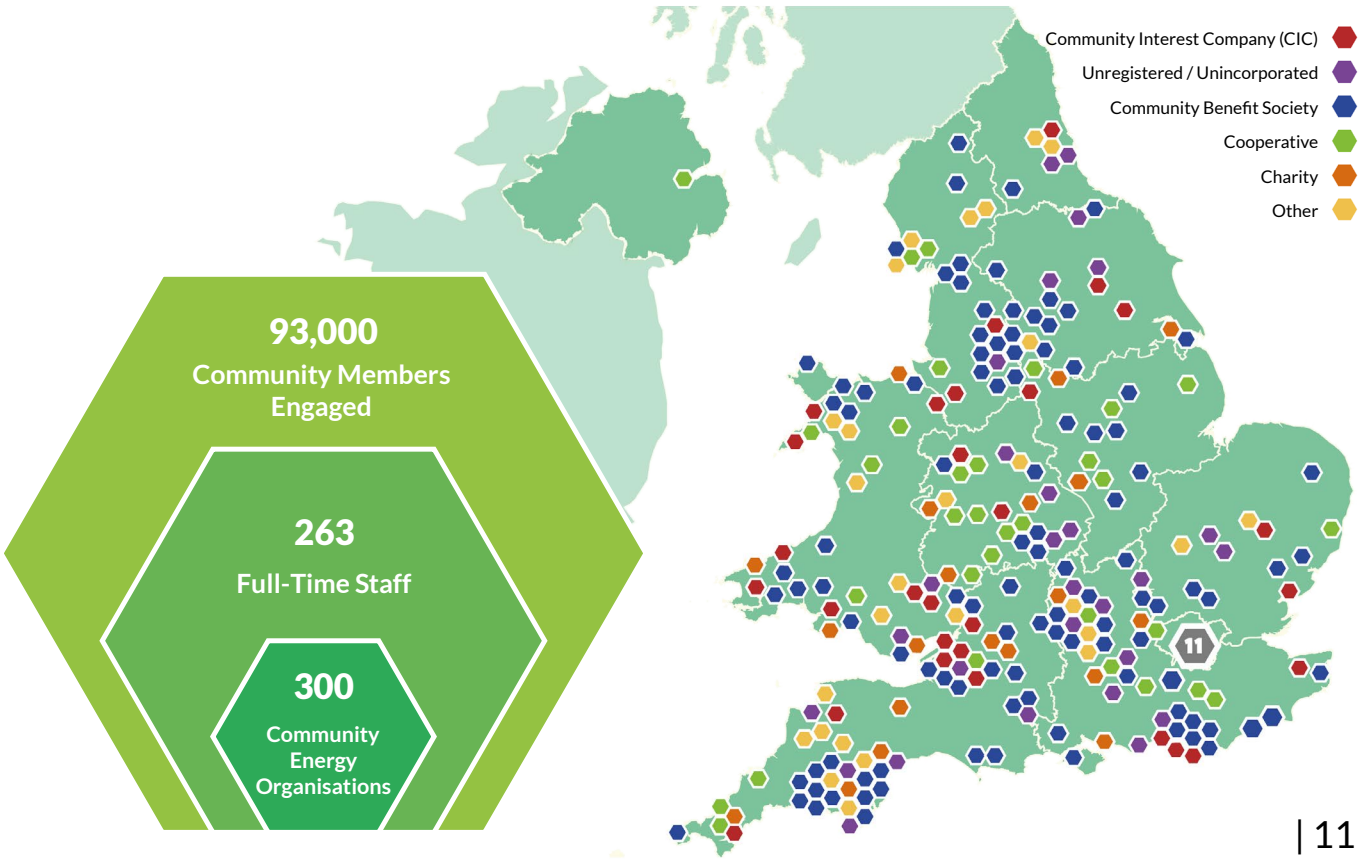
South East London Community Energy (SELCE)

Community Energy in 2019

In response to a changing policy landscape and amidst emerging technology innovations, the community energy sector in the UK is undergoing a period of radical and rapid change. The sector has shown a comparative upturn in 2019, though unable to reach the successes seen prior to 2018. This is in part related to a rush of projects prior to the closure of support schemes but also a sign of the continued innovation and drive of those working within the sector.

Understanding the impacts of policy change, highlighting the emerging strategies to cope with such change and capturing the economic, social and environmental value of community energy are critical at this juncture. This understanding will help new business models and innovative project designs to spread across the sector, contributing to a new chapter of dynamism within community energy while also helping to ensure that the design and implementation of support strategies for community energy will be made more appropriate, effective and impactful.

In 2019, 300 community energy organisations were identified throughout England, Wales and Northern Ireland. Of these, 252 were found to be located in England, 47 in Wales and just 1 in Northern Ireland. Community Benefit Societies (BenComs) (47%) and Community Interest Companies (CIC) (11%) structures continued to dominate organisations formed since 2015. Whilst communities still focused primarily on energy generation (268), organisations were increasingly found to be developing low carbon transport (47), energy storage (39) and energy efficiency (102) projects in 2019.



A Wide Reaching Sector

The community energy sector has local people at its heart, both through those working to grow and develop community-led low carbon projects and through the impacts those projects deliver. In 2019, community energy organisations employed the equivalent of 263 full-time staff (FTE), an increase of 28% compared to the previous year. This shows an important aspect of the economic contribution of community energy, as well as the increasing professionalisation of the sector. Whilst still a volunteer-dominated sector – 44% of organisations reported no paid staff – communities were increasingly able to employ part-time staff through project income, long-term grant funding and partnerships with other organisations.

The community energy sector in 2019...

Supported

263

Full-time Staff

Engaged

93,000

Community Members

Sector impact is further evidenced through the reach that community energy organisations achieve, with respondents reporting they had engaged 93,000 individuals via mailing lists and newsletters in 2019. Through such outreach, community organisations can raise awareness and educate local people, and increase their capacity to deliver direct social and economic benefits to community members, often core to organisational objectives. These figures also demonstrate the considerable public interest in community-level and community-owned energy initiatives.

Improving these outcomes will require supporting the ongoing growth of organisational capacity and skills in the community energy sector and facilitating the time and effort communities need to dedicate to achieving their aims. These factors were listed as two of the biggest barriers to the community energy sector by respondents, secondary to reduced subsidy support.

Electricity Generation

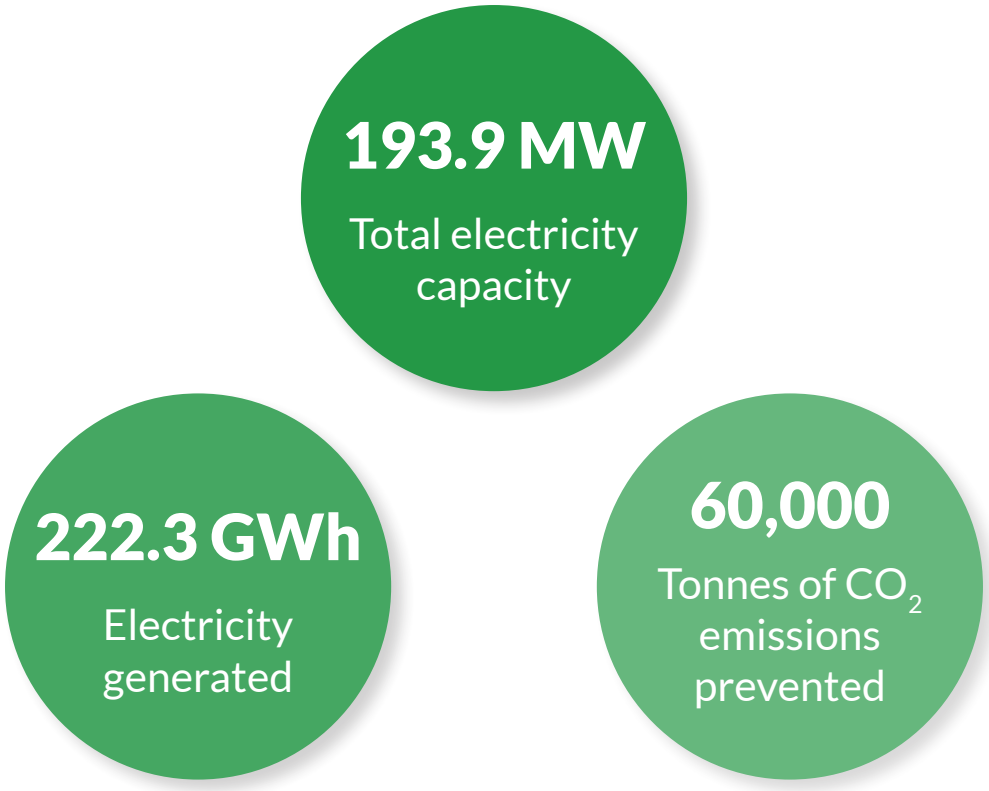
Across the 230 community organisations involved in electricity generation, 37 groups installed, or brought into community ownership, 114 new electricity generation projects during 2019, totalling 15.4 MW of community-owned capacity.

This included solar PV (14.0 MW), wind (1.2 MW) and hydroelectric (0.2 MW) projects, representing an 8% increase in community-owned electricity capacity. Of the projects installed in 2019, 97% were supported by the Feed-in Tariff scheme.

Notable projects in 2019 included 2 MW of solar PV across 36 schools in the UK installed by Solar For Schools CBS, the completion of Cwm Arian Renewable Energy's 700 kW wind turbine in South Wales and Yealm Community Energy's purchase of the 7.3 MW Creacombe solar farm in South Devon. Yealm Community Energy's project was developed alongside local farm owners and funded via Power to Change, with half of its site becoming one of the first post-subsidy solar farms in the UK.

A further 10.6 MW of previously unreported community-owned generation was identified in 2019. This included 2018 installations by Solar for Schools CBS and the Sheriffhales solar farm, supported by Thrive Renewables.

Community-owned electricity in England, Wales and Northern Ireland

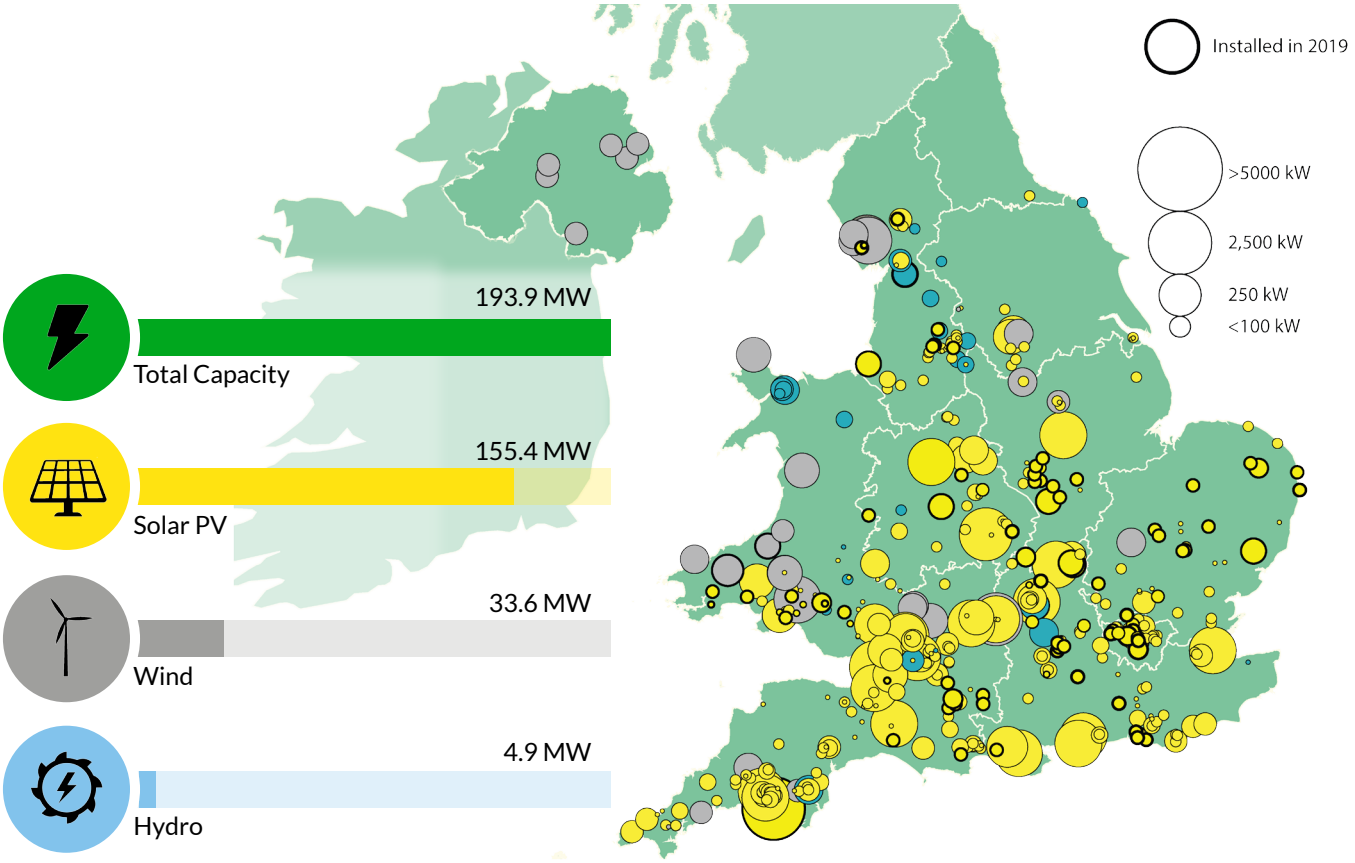


As of December 2019, the total community-owned electricity generation capacity increased to 193.9 MW across England, Wales and Northern Ireland, comprising:

- 155.4 MW solar PV
- 33.6 MW wind
- 4.9 MW hydroelectric

Including 71 MW in Scotland, the total UK community-owned capacity increased to 264.9 MW in 2019.

In 2019, community energy projects generated 222.3 GWh of low carbon electricity, equivalent to the annual electricity demand of 74,100 UK homes, up from 64,000 in 2018, and reducing greenhouse gas emissions by 60,000 tCO_2e. Cumulatively since 2016, community energy organisations have prevented over 238,000 tonnes of carbon emissions through electricity generation.



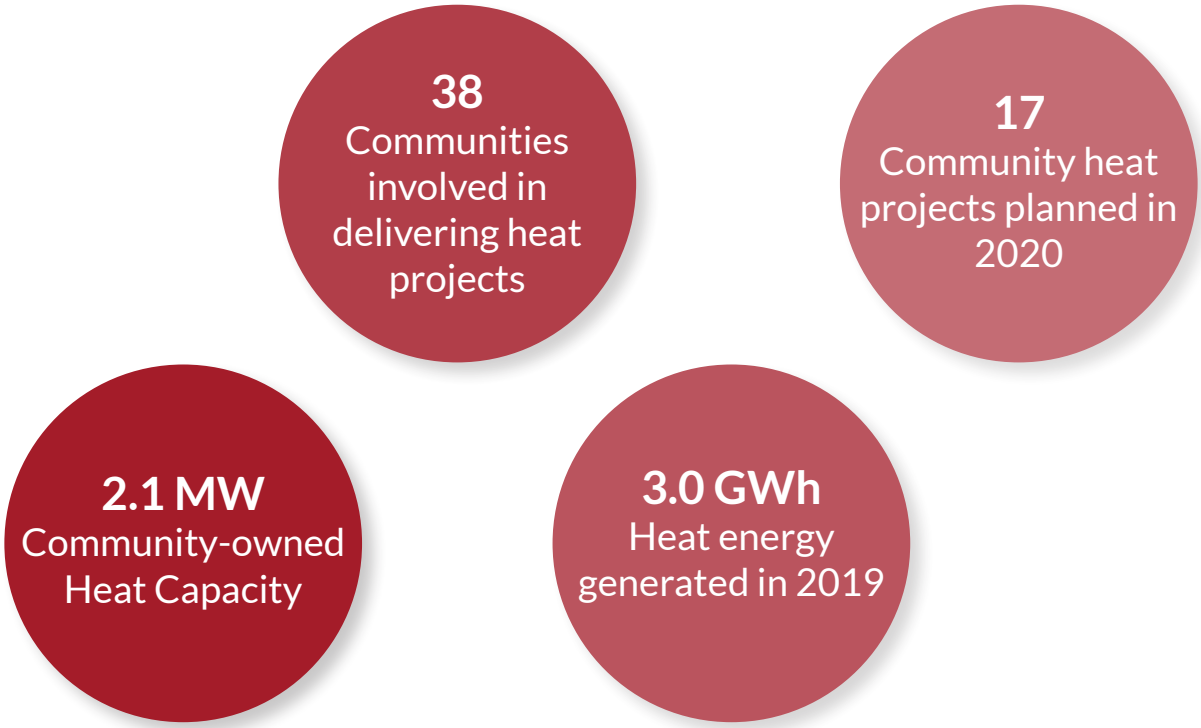
Community Electricity in 2020

86 community organisations stated that they are planning electricity generation projects in 2020, including nearly 2 MW of solar PV, wind and hydro planned before the Feed-in Tariff deadline. A further 40.9 MW is in planning, including large-scale unsubsidised projects with commercial and public partners or the purchase of existing generation assets, as well as smaller scale micro-hydro and rooftop solar.

Community-owned heat generation has seen low levels of deployment, with 2019 marking the lowest level of newly installed capacity to date. Just 27 kW of new heat capacity was identified, comprising two small-scale air source heat pumps installed by Nadder Community Energy and Brighton & Hove Energy Services Co-operative (BHESCo).

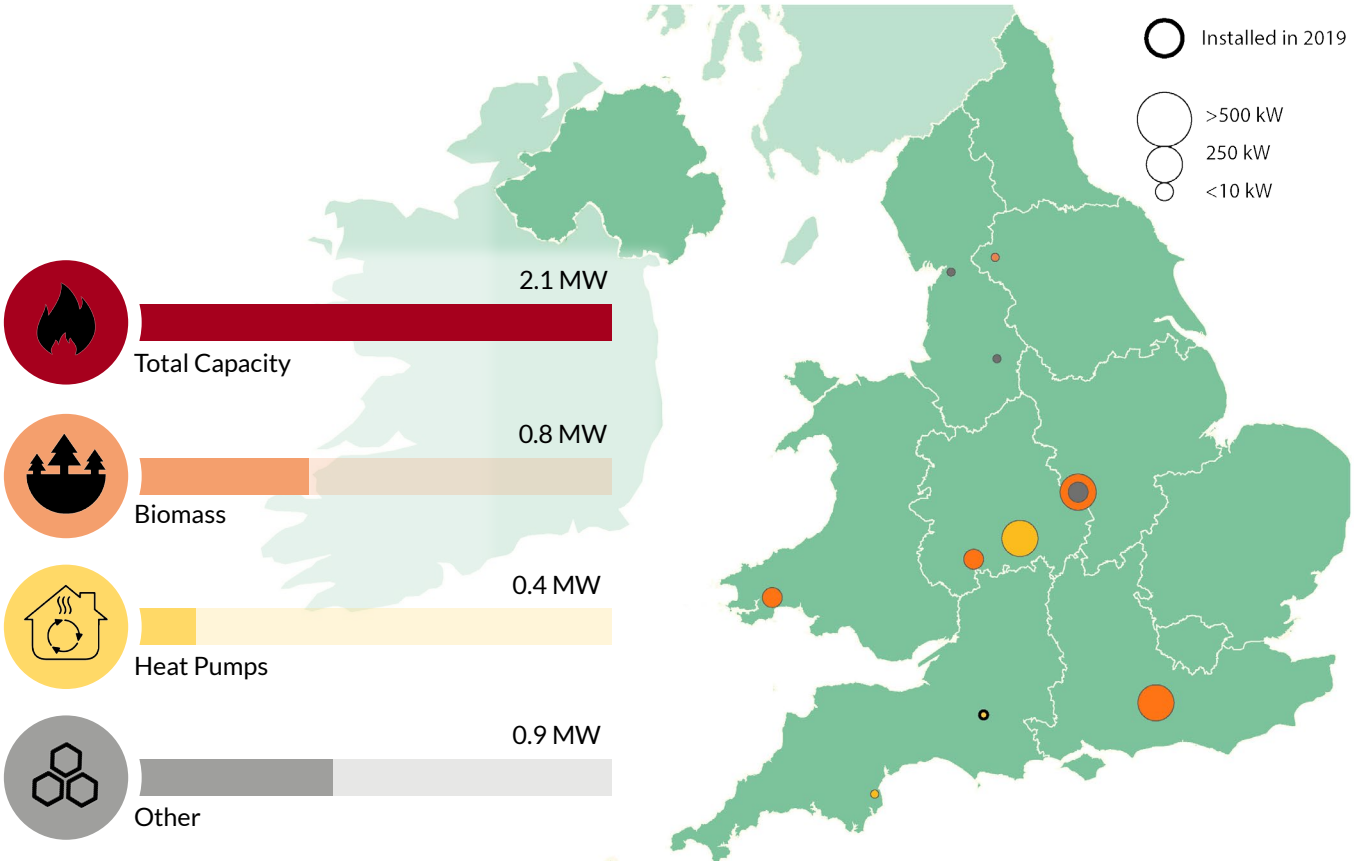
In total, community organisations were found to own 2.1 MW of heat generation capacity, with a total annual output of 3.0 GWh. Capacity is dominated by biomass, with contributions from community ground and air source heat pumps and solar thermal.

Community-owned heat in England, Wales and Northern Ireland



Community organisations highlighted the complex nature of larger heat projects – such as heat networks – limiting deployment, with communities struggling to fund, resource and deliver projects within subsidy deadlines. Heat networks typically lend themselves to larger asset owners, such as local authorities and new build developers, due to the significantly higher costs of retrofitting systems. Community organisations developing large heat generation projects were typically found to be working alongside these types of partners.

Another reason for the low deployment figures may relate to the difficulty of identifying small schemes, such as domestic-level heat pumps and solar thermal installations. Several organisations noted that they had funded homeowners in their communities to install heating infrastructure but did not themselves own any heat generation projects.



Community Heat in 2020

38 organisations stated that their organisation was involved in delivering heat energy projects, with 17 planning to deliver projects in 2020. These projects were found to have an innovative focus, including ground source heat networks and utilising heat pumps alongside electricity generation or as part of grid flexibility projects.

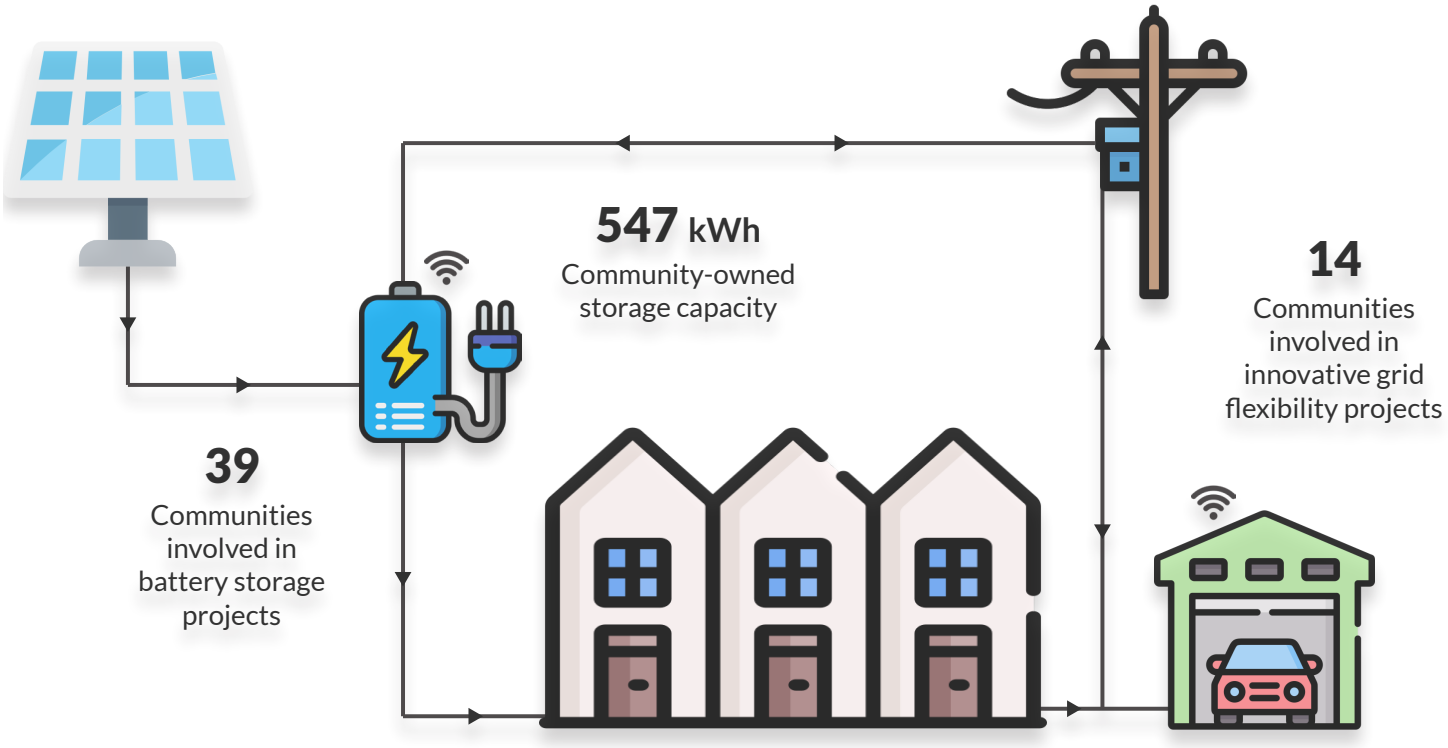
Changes to the Renewable Heat Incentive (RHI) in 2019 included the extension of the domestic RHI until March 2022 but the non-domestic RHI by just a year, until January 2021. These changes are unlikely to support the larger infrastructure projects that communities are keen to develop, although a new Clean Heat Grant scheme is expected to follow in April 2022.

Improving subsidies to allow for a more participative and community-focused approach to developing heat energy systems would be of great benefit to the community energy sector and, if supported by heat infrastructure, could provide a route to lower-carbon heat whilst retaining local value and growth.

Energy Storage

Energy storage has been a key focus over the last three years for communities seeking to deliver greater local value, improve post-subsidy project feasibility and engage with emerging flexibility opportunities in an increasingly distributed and digitised energy network.

In 2019, 39 community organisations were developing energy storage projects, focusing particularly on electricity storage (87%) as well as investigating more innovative ideas such as tidal impoundment, methane and hot water storage. 547 kWh of electricity storage was identified across England and Wales, focused mainly on domestic and community building scales but including a 228 kWh installation at a solar farm in South Wales. Community-led energy storage investment was found to total just over £1 million up to the end of 2019.



Storage & Innovation

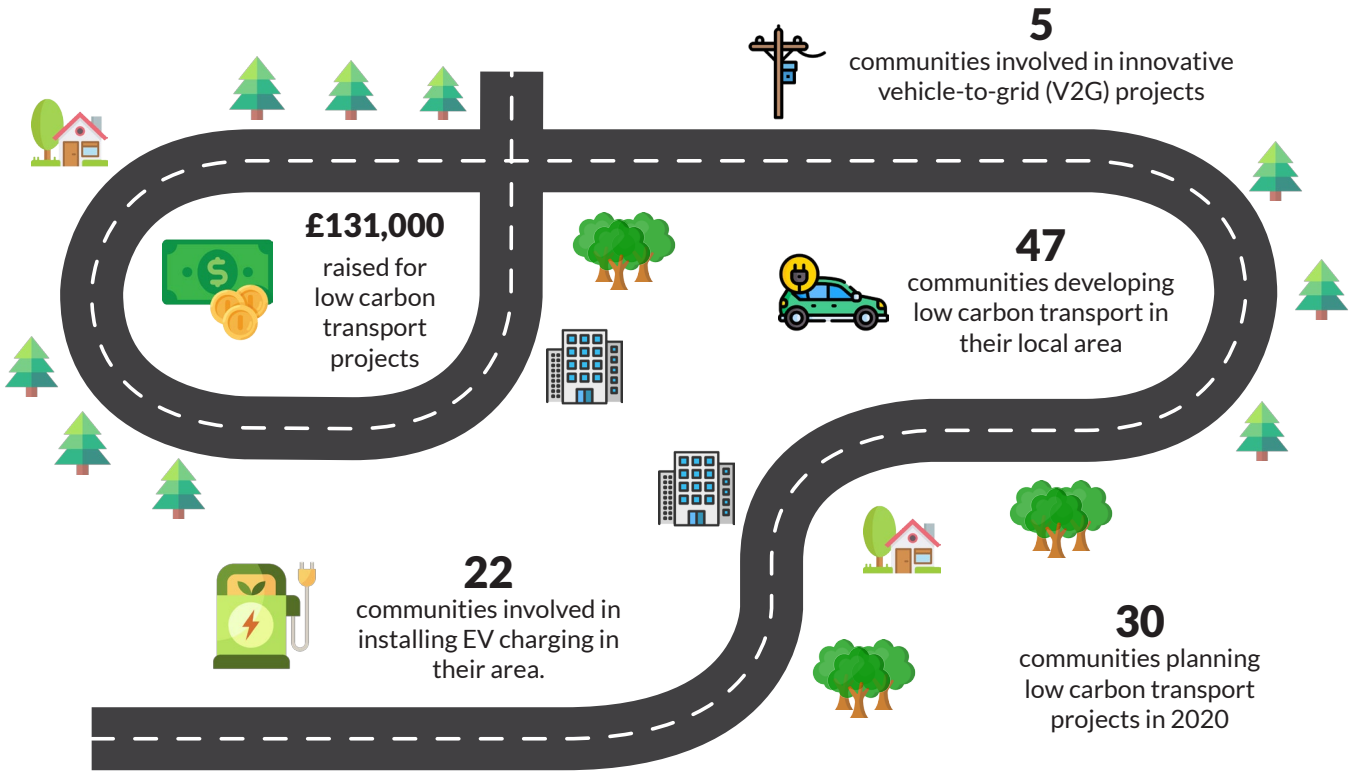
Energy storage was highlighted by two types of community organisation: those in off-grid locations or without access to a financially viable grid connection, and those seeking to develop new income streams through grid services. 19 community organisations were found to be working on, or towards, providing grid flexibility services, most often in partnership with the local distribution network operator (DNO). Project Local Energy Oxford (LEO) is an example of a project pushing the frontier of community energy to understand how smart, flexible local energy opportunities can be realised in the ongoing energy network transition.

Energy storage is expected to become an increasing focus in the community energy sector, as post-subsidy business models are refined and shared, technical knowledge is developed, and the energy system transitions towards an increasingly distributed and digitised future.

Low Carbon Transport

Low carbon transport technologies are becoming more popular and less expensive, providing new opportunities for community schemes. Community energy organisations involved in low carbon transport projects increased by 62% in 2019, with 47 communities actively developing low carbon transport plans. Of these organisations, 89% focused on electric vehicle projects, including both community transport and charging infrastructure. Other low carbon options include hydrogen, biofuels, mobility planning and educational campaigns. In total, community organisations invested £131,000 in low carbon transport projects in 2019.

Notable projects in 2019 included TrydaNi, a cross-community project seeking to coordinate and deliver electric charging points throughout Wales, financed through community shares. Another project seeking to decarbonise the transport system is Riding Sunbeams, which is a collaborative approach to establishing solar PV to power the UK rail network. The project installed a 60 kW solar PV test site near Aldershot station in 2019, demonstrating the potential for community involvement and partnerships with low carbon infrastructure and transport providers.



Community Transport in 2020

30 organisations stated that they were planning low carbon transport projects in 2020, with a strong focus on delivering infrastructure to support electric vehicle use. These projects were often found to be in tandem with grid services, or vehicle-to-grid (V2G), as communities seek new models of income generation alongside the environmental and social benefits that low carbon transport projects can deliver.

Energy Efficiency

Energy efficiency formed a core element of 102 community organisations' low carbon activities in 2019. Community organisations can deliver low carbon change through a variety of means, including community engagement and education, provision of efficiency services, direct improvements and upgrades, and through grants or loans for energy efficiency works. Since 2016, community organisations have engaged 234,000 community members, providing nearly 28,000 energy efficiency improvements or upgrades.

22,000 Homes and **415** Businesses engaged by community energy efficiency projects

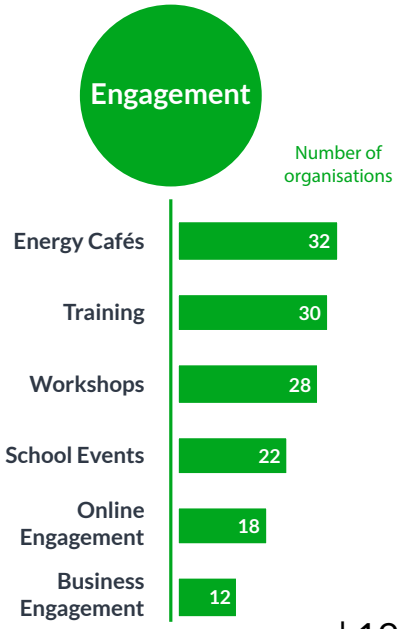
9,155 Energy efficiency services provided

3,649 Energy Efficiency Improvements installed

Engagement

Community energy groups most often reported involvement in energy efficiency engagement activities. This included the running of events – such as energy cafés, workshops, and school and training events – as well as engagement with community members by newsletter, phone and online. Respondents highlighted the need to raise awareness and provide advice to community members, informing them of what they can do to improve their home or business's energy efficiency and the process of doing so.

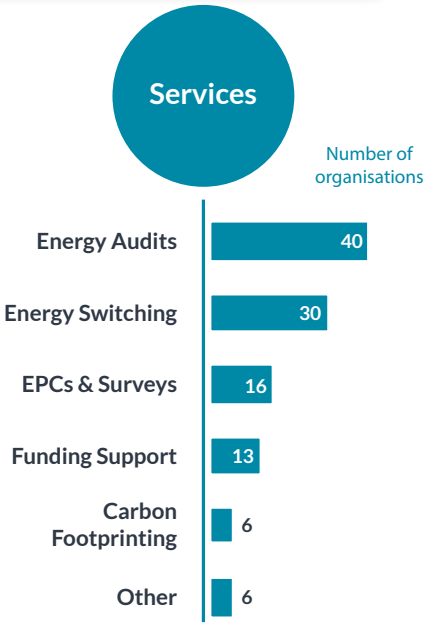
In 2019, 76 community energy organisations were engaging their community in respect to energy efficiency, including 22,000 community members, 415 businesses and 380 public institutions. This included over 3,000 local people and SMEs engaged by Bristol Community Energy to conduct whole house low carbon retrofit surveys.



Services

Community organisations offered a range of energy efficiency supporting and enabling services, helping community members to understand and deliver improvements. Services included conducting energy audits, carbon footprinting, energy performance certification (EPC), energy switching and support towards obtaining funding for energy efficiency work.

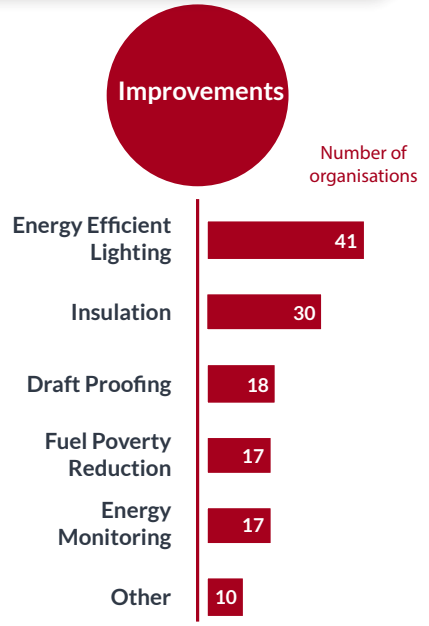
In 2019, community energy organisations delivered energy efficiency services to 9,155 homeowners, community organisations, charities and businesses. Plymouth Energy Community provided energy efficiency services to over 2,800 local households, supporting tariff switching, reducing fuel debts and supporting vulnerable customers to access benefit entitlements, including dedicated support via over 1,300 one-to-one home visits.



Improvements

Direct improvements, including insulation, draft proofing, efficient lighting and energy monitoring systems, were arranged or installed by 57 community organisations in 2019. These upgrades were found to be offered predominantly to local homeowners and across community assets (e.g. village halls), with a minority of well-established organisations working with larger businesses and public buildings to reduce energy demand.

Energy efficiency improvements were installed across 3,649 properties, including local homes and businesses. In total, over £1.5m was invested in these improvements, including £1m of improvements installed by Carbon Co-op in Manchester as part of the BEIS-funded "People Powered Retrofit" project and through local authority and NHS partnerships.



Funding

In 2019, 20 community energy organisations supported local people, charities and businesses with £610,000 in energy efficiency grants and loans. Investment was often found to come from existing community benefit funds, including income from energy generation projects. These investments included projects such as OxFutures, a Low Carbon Hub project which has conducted 80 energy audits, with over 200 separate improvements arranged or installed across Oxfordshire.

Case Studies

Brighton & Hove Energy Services Co-operative (BHESCo)

Brighton & Hove Energy Services Co-operative (BHESCo) empowers property owners in Sussex to meet their heat and power needs through energy efficient buildings and clean, affordable and locally-owned sources of energy. Since 2015 the co-operative has developed 50 community energy projects in conjunction with a variety of local partners.

A partnership with Werks Creative, a co-working and shared office business, has led to the delivery of low carbon energy projects at eight locations around Brighton and Hove, and a partnership with the Local Authority in 2019 enabled BHESCo to complete five large-scale solar power projects on local schools. BHESCo has recently partnered with the village of Firle in East Sussex to secure RCEF funding to ascertain the feasibility of replacing off-grid, carbon-intensive heating with air source and ground source heating. BHESCo has additionally partnered with the Local Authority's 'Warmth for Wellbeing' initiative and the EU's SHINE programme to support 426 households, improving the energy efficiency of their properties and completing 10 commercial energy surveys through the Sustainable Business Partnership.

In 2020, BHESCo plans to continue energy efficiency surveys through the Warmer Sussex programme being delivered in partnership with RetrofitWorks and BEIS, in addition to installing energy generation and energy efficiency measures for several local community buildings through UK Power Networks' 'Power Partners' funding.

Power to Change

Power to Change is the independent charitable trust that supports community businesses across England. From pubs to libraries; shops to bakeries; swimming pools to solar farms; community businesses are creating great services and products, providing employment and training and transforming lives.

In 2019, Power to Change partnered with Big Society Capital to increase community ownership of large solar farms and to support innovation in business models for the community energy sector. Community Owned Renewable Energy LLP is a £40m investment programme designed to purchase operational, ground mounted solar farms in England and hand them over to community businesses.

The Next Generation Innovation Fund pioneers innovative community-led energy projects and business models, with grants of up to £100,000 for community businesses that develop decentralised, decarbonised, and democratised energy business models.

Cwm Arian Renewable Energy

Cwm Arian Renewable Energy (CARE) is a community benefit society in Pembrokeshire in Wales, working to provide energy through community ownership of wind turbines and deliver economic and social benefits. In November 2019, CARE successfully installed a 700 kW wind turbine following a 13-year project development process supported by the Welsh Government's Energy Service and a loan from the Development Bank of Wales.

Income generated by the turbine will support a community fund to be distributed for use within the local area, including projects to address much needed reductions in fuel poverty in the region as well as supporting green and community-owned enterprise. The turbine generated over 88 MWh of clean energy in 2019, with the organisation aiming to further install solar panels on a community building. A share offer, which CARE aims to make available later in 2020, will give local people the opportunity to take ownership of, and invest in, the wind project, receiving financial returns throughout the project's lifetime. CARE faced challenges in finding affordable finance options due to the reduction of FiTs. However, through their strong relationships and conversations with other local community groups such as Awel Aman Tawe and Transition Bro Gwaun, CARE was able to find the support, funding and skills necessary to deliver the successful community wind project.

Riding Sunbeams

Riding Sunbeams was founded by Community Energy South and Possible (formerly 10:10). Riding Sunbeams is a world-leading renewable energy developer, focused on decarbonising rail traction networks through the connection of unsubsidised, community owned direct-wire renewable generation. In partnership with Network Rail, Riding Sunbeams pursues a "triple bottom line" – low carbon renewable energy generation, connected directly to the rail traction system at a commercial price, with significant social impact for lineside communities.

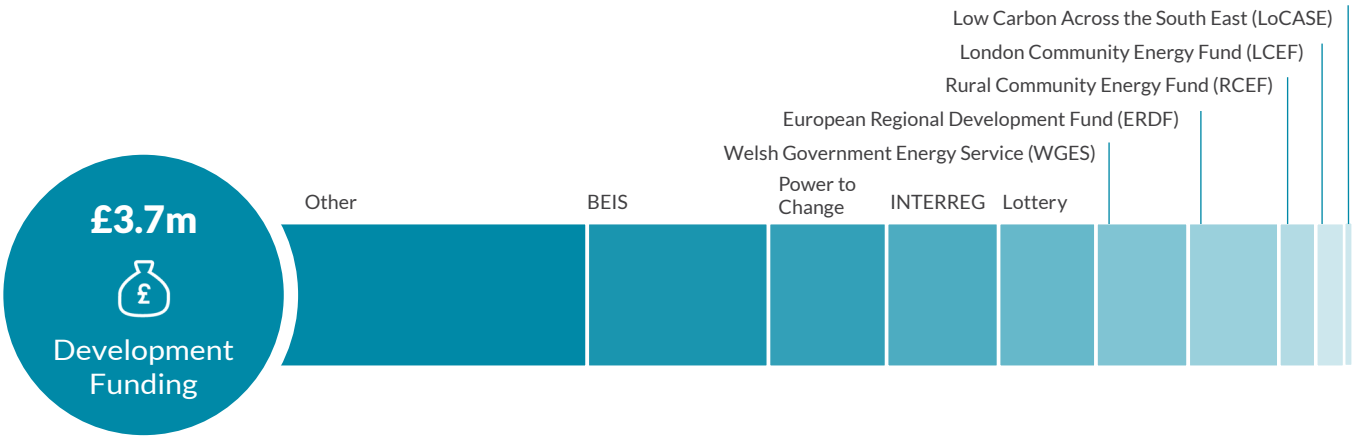
Working alongside Innovate UK and the Department for Transport, Riding Sunbeams has tested this solution with the "First Light" real-world demonstrator solar PV unit connected to the Wessex Route during 2019. In 2020, they plan to continue to collaborate to advance the R&D solution for megawatt scale solar deployment to accelerate decarbonisation of DC routes across the Southern region. Working with Transport for Wales focusing on the Wales and Borders Route, Riding Sunbeams will also demonstrate a similar solution for direct supply to AC electrified routes, as well as testing integration of lineside storage technologies. Riding Sunbeams estimate that each MW of solar capacity connected to the rail traction system will deliver annual carbon savings of around 245t/CO_2e. Riding Sunbeams was recently included as a project model in the South East Local Energy Hub Action Plan.

Funding & Finance

Funding

Funding for community energy projects was found to total £3.7m in 2019, including £125,000 from the government-funded Rural Community Energy Fund (RCEF) in England and £313,000 from the Welsh local energy fund, the Welsh Government Energy Service (WGES) - formerly called Ynni Lleol. Whilst revival of the RCEF via the recently established Local Energy Hubs is a welcome development, communities are increasingly turning to a diversity of funders to develop new and innovative ideas. Since 2016, the community energy sector has secured £8.2m in early stage funding to develop low carbon projects.

Notable changes in 2019 include funding contributions from Power to Change's Next Generation fund, which supported 6 communities to deliver and develop innovative energy projects and business models, including locally owned energy supply for schools in Leicestershire and trading of solar PV energy in Bristol.



Other examples included large scale, multi-partner innovation projects, including funding totalling £308,000 from the European Regional Development Funding (ERDF), £615,000 from UK Government programmes – including Innovate UK and Energy Efficiency Supply Chain Pilot - and £380,000 of EU Interreg project funding. This diversification of funding may indicate community organisations are becoming more adept at obtaining funding from outside community energy-specific government support mechanisms, as well as the sector's increasing participation in larger-scale partnership-funded projects.

Investment

To date, the community energy sector has raised over a quarter of a billion pounds of investment for low carbon projects and initiatives. In 2019, investment in the community energy sector totalled £31.1m, a drop of 22% in comparison to 2018. This was found to be primarily made up of loans (£22.9m) – including £19.2m in refinancing loans – and community share offers (£4.9m), alongside bond offers (£1.4m), grants (£0.8m), self-funding (£0.1m) and other sources (£1.0m). Community energy organisations' share offers were found to mostly support the deployment of aggregate solar PV installations, including projects in Brighton, Dorset and London.

The reduced investment value in 2019 is in contrast to the greater number of successful projects completed. Community organisations reported a significant amount of investment to have been raised in 2018 for projects completed in the following year. This included loans for large scale solar asset purchases and several community share offers, such as Burneside Community Energy's £330,000 share offer – completed in December 2018 – which supported the installation of 430 kW of solar PV in 2019. This shifting of investment across years may indicate that the lower level of investment in 2019 is the first sign of reduced activity into 2020.

2018 saw significant refinancing investment in the form of loans and bond offers for existing projects and aggregate community portfolios, totalling £22.4m. This trend continued into 2019, with loans valued at £19.2m secured for refinancing purposes, including large-scale wind farm sites and project portfolios.

The Value of Community Energy

A Broader Perspective

The local economic, social and environmental impacts of the sector are central to the argument for greater acknowledgement of, and support for, community energy. In 2019, *energy communities* were formally recognised by the EU, acknowledging and setting out a framework for citizen-led energy and the social and environmental benefits it can deliver. It is therefore important to develop new tools and standardised frameworks for quantifying and demonstrating value. Gaining an up to date understanding of the value generated by community energy projects will enable improved advocacy and drive improved support for the sector in 2020.

£4.6m
Local Economic Benefits in 2019

Community-funded **educational, social and health benefits**

65,200
tonnes CO_2 emissions prevented

Economic Value

Community energy produces economic value through community benefit funds, external funding and project income. This value may be distributed directly – via grants and loans – or indirectly, through development or purchase of community assets, cost savings, job creation and ethical investment options for community members.

In 2019, community energy organisations had a total community benefit fund value of £2.5m across 96 separate organisations. Community benefit fund spending in 2019 totalled £720,000, with funding provided to community organisations such as energy advice services, sports clubs and environmental conservation charities.

Further cost savings to local people and businesses totalled £1.9m, most often generated by energy efficiency projects and cheaper electricity provided by community solar PV. Since 2017, community energy organisations were found to have distributed £3.4m in community benefit funding for local development and low carbon projects.

Further to this, community energy organisations supported 51.2 full-time equivalent jobs in their local communities, including positions within partner community organisations or as part of distinct community projects. This is alongside the 263 jobs within community organisations themselves. Organisations were found to have provided grants totalling worth £872,000 and loans of £1.1m in their local communities during 2019.

Social Value

The social value of community energy is more challenging to measure. Social value encompasses non-economic benefits such as education, awareness-raising, stimulating behaviour change, community cohesion, improvements to local environments, and both individual and collective health and wellbeing.

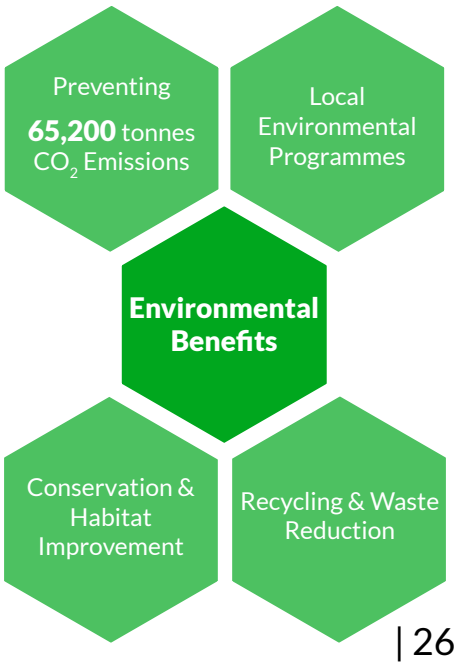
Communities reported wide-ranging activities, focusing primarily on supporting and developing a low carbon community. Education initiatives are core to many community energy organisations, including providing school workshops, energy advice clinics to help vulnerable people, energy efficiency clinics and project site visits. Further to this, respondents highlighted the importance of supporting local services, including health centres, events to improve social cohesion and supporting sports clubs and initiatives.

These highly valuable activities help to encourage, enable and improve local low carbon action and reduce the economic burden placed on many public services and charities.

Environmental Value

Community energy has an environmental impact on a global scale, reducing greenhouse gas emissions through low carbon energy generation and demand reduction, and contributes to national carbon emissions targets. The work of community energy organisations also supports local environmental improvement and conservation. This is particularly true of pollution reduction through energy efficiency, heating system improvements, low carbon transport initiatives, and habitat improvements on land used by solar and wind farms.

In 2019, community energy organisations prevented 65,200 tCO_2e of greenhouse gas emissions across energy generation projects. Through energy efficiency and low carbon transport projects, and behaviour change as a result of awareness raising and educational projects, this figure is likely to be much higher.



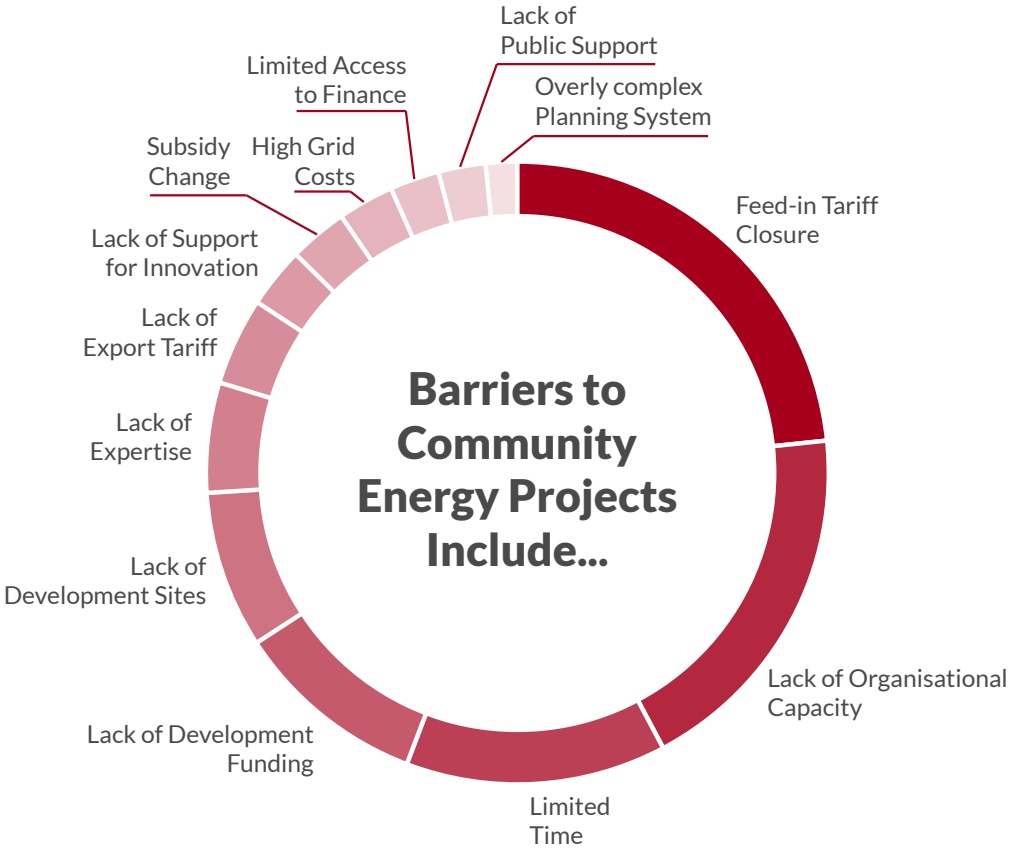
Challenges & Opportunities

With changes to the subsidy landscape for electricity generation, as well as historical underfunding and limited support for communities engaging in low carbon projects, 2019 was expected to be a challenging year for the sector. Whilst the upsurge in new projects is related to the imminent closure of support schemes, there is evidence of growing resilience in the sector, as communities continue to innovate and explore new forward-looking approaches.

Barriers

As expected, community organisations stated that the reduction and upcoming removal of the Feed-in Tariff (FiT) scheme is the greatest barrier to their work. Uncertainty and change in renewable energy policies – particularly at community scales of development such as the FiT scheme and Social Investment Tax Relief – have dramatic impacts on the growth potential of the community energy sector in the UK. Without clear ambition and appropriate supporting policies, many in the community energy sector stated that their low carbon ambitions and objectives were either limited or curtailed.

Following this, the greatest barriers were found to be organisational capacity and time. This is due to the community energy sector's reliance on volunteers, alongside limited opportunities and means for greater capacity building. Whilst some early stage funding for technical feasibility exists in the community energy sector – such as the government-funded Rural Community Energy Fund (RCEF) – funding for core staff costs is less common.



Stalled Projects

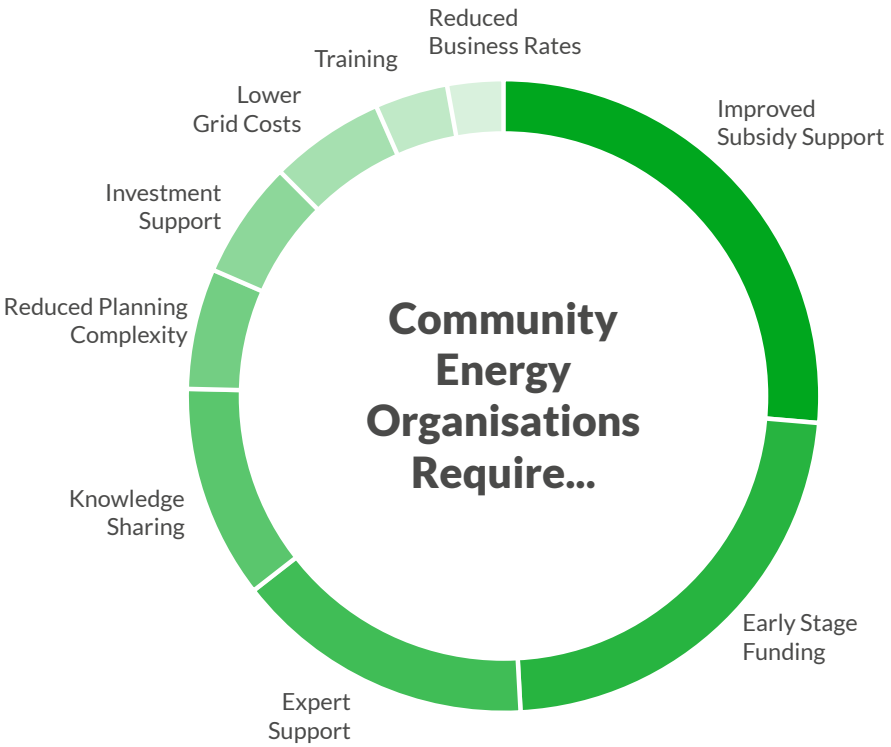
Whilst some community organisations were pushing to meet subsidy deadlines, there were still a large number of stalled projects in 2019. Respondents reported 89 stalled projects, the majority of which were electricity generation (64%), with stalling most often attributed to limited funding and lack of financial viability due to low subsidy value and lack of access to finance. Several organisations noted the knock-on effects of project delays on FiT registration, caused by changing conditions from regulators, delays in securing sites, local authority bureaucracy and planning permissions.

Further to this, community organisations highlighted a lack of sites suitable for energy development as a major issue, with organisations that identified sites often stalling due to difficulties in partnerships with site owners or developers. Respondents highlighted viable plans, such as EV charging networks, shared loop heat networks and share-funded solar PV, which stalled due to an inability to find supportive partners.

Supporting Community Energy

Greater acknowledgement of the time and capacity requirements of low carbon projects is needed to ensure funders are fully aware of this aspect of the cost of project development. Funding must be delivered in a way which ensures communities can best utilise early stage funding and deliver impactful local energy projects.

Furthermore, greater attention to delivering capacity building services is needed, such as community energy workshops, advice and peer mentoring services, sharing business models and technical knowledge. Fostering and supporting new partnerships could overcome these barriers and maximise project impacts.



New Approaches to Community Energy

As communities continue to innovate through new technologies, business models and partnership approaches, the needs of the sector have changed. While communities continued to request better support mechanisms into 2020 and funding to develop initial ideas and bring projects to fruition, 2019 also saw an increase in demand for expertise, knowledge sharing and support to develop innovative projects. These relate to a growing need for better information sharing and capacity building in a rapidly changing sector, where technical innovations such as flexibility services and emerging new approaches, including asset purchase, community aggregation and joint venture approaches, are becoming an increasing focus.

Improving dialogue and collaboration between communities and key sector stakeholders - government, regulatory bodies (e.g. Ofgem), local authorities, industry organisations (e.g. distribution network operators), commercial developers and energy experts – is needed to ensure communities can influence and maximise the benefits from the ongoing energy network transition. The number and diversity of innovative projects detailed in the State of the Sector 2020 Report shows there is a strong drive throughout the community energy sector to participate and play an important role in the energy network transition, ensuring it is a just transition with equitable access to the opportunities and benefits it presents.

Resilience in a Post-Subsidy Sector

The continued growth of the community energy sector will depend on the drive, passion and innovation of the communities and people within it, alongside improved government and sectoral support. Maintaining momentum in the face of increasing barriers to viability will be the primary challenge for community energy organisations moving into a post-subsidy 2020. To achieve this, communities are continuing to investigate and utilise new approaches to community-led low carbon development.

Technologies

79 community organisations stated that they were interested in developing projects with innovative technologies to overcome barriers to their work, with 23 already involved in developing such projects. These technologies offer community organisations new ways of engaging with, and influencing, the energy system, as well as providing new routes to income generation and service provision, such as grid-connected low carbon community transport.

Projects included a diverse range of technologies, such as battery storage, direct supply, demand side management (DSM), demand side response (DSR), flexibility services, peer-to-peer (P2P) energy trading, vehicle to grid (V2G), smart local energy systems, smart grids and shared loop heating.

Amongst these technologies are several grid services, showing that communities are actively engaging with energy networks to find new ways of deriving local value from low-carbon systems. For example, the OpenDSR and OpenLV projects are bringing together communities and energy experts to develop community-owned approaches to energy aggregation and service provision.

Flexibility Services

Heat from Sewage

Vehicle to Grid Services (V2G)

Battery Storage

Demand Side Response (DSR)

Peer-to-Peer (P2P) Trading

Community energy organisations highlighted the barriers to entry for such frontier technologies, including lack of technical expertise and access to information and data. Whilst collaboration is occurring in the innovative technology space, greater support is needed for communities engaging in these new ideas and projects.

This should include knowledge and information sharing via workshops, online resources and training provision to community organisations, as well as funding to help organisations free up the time they need to undertake such capacity building. Widespread and deliberate efforts by community energy organisations will be needed to ensure that the necessary skills and knowledge can be identified, acquired on a voluntary or paid basis, and utilised to understand, develop and make use of innovation opportunities in the future.

Business Models

In total, 28 community energy organisations stated that they are involved in developing new approaches to community-led low carbon development, with a further 67 communities interested but not actively exploring such approaches.

These new approaches were found to focus on:

Greater localisation: including aggregation of small-scale solar PV across communities and greater local use / supply of energy.

Digitisation: including use of digital monitoring and management approaches to enable the development of smarter local energy systems and grid services.

Diversification: including developing new heat, energy efficiency and transport projects.

Joint Ventures: leveraging partnerships to develop larger projects without the need for subsidisation, such as purchasing existing energy assets with commercial developers.

With such rapid change across the energy sector, it is not surprising that 55 community organisations reported having to adapt their business models in response to changing policies. These included focusing on non-subsidy-dependent projects, such as local solar PV use, renewable heat projects and energy efficiency programmes. Respondents noted that the removal of the FiT scheme and lack of suitable replacement led to many of their larger scale ambitions being curtailed, with communities focusing on smaller scale projects, diversifying into different technologies or dropping projects completely. For some, this meant giving up on years of work to develop wind, solar, hydro and storage projects.

Whilst many community organisations were seeking to complete projects within the FiT deadline, respondents indicated they were actively aware that the community energy sector must evolve to meet new challenges. Prioritising the identification, exploration and deployment of alternative and emerging business models will help to ensure future success and growth. Whilst, critical to this agility and growth will be collaboration and knowledge sharing between community energy organisations as new approaches are developed into 2020.

Partnerships

154 community organisations were found to be making use of diverse partnerships, including cross-community collaboration, as well as partnerships with commercial organisations, energy network operators, local authorities and the wider public sector. Examples include joint grant funding with the local authority for fuel poverty alleviation in Brighton, and the Cyd Ynni in Wales, a consortium of community energy organisations that work to help communities develop low carbon projects.

Respondents stated that the greatest benefits of partnership working included knowledge sharing, skills transfer, partner influence and access to wider funding options and investment. Respondents noted that partners often supported them during the funding application process or had access to funds that communities cannot usually access (e.g. funding for local authorities). From the community side, partnerships were also reported to provide public and commercial partners with an improved understanding of local needs, engagement approaches and access to crowdfunding.

Community Energy in 2020

With the energy system in a critical stage of transition towards a more decentralised, distributed and digitised system, as well as wholesale changes to the policy support landscape, 2020 will be a pivotal year for the entire energy sector.

For community energy, electricity generation projects are expected to become more financially marginal and difficult to deliver, with a shift towards new models integrating local energy generation with demand management services to achieve project viability. Changes in delivery models, such as greater uptake of community shares rather than debt finance, may be expected as communities seek to make increasingly marginal projects work. Furthermore, existing organisations are likely to diversify their aims, further prioritising energy demand reduction in their communities, investigating low carbon heating and transport, and delivering more varied projects through existing income streams.

In the face of challenges, communities are still seeking to develop new low carbon projects, driving change through a variety of new and innovative means. To support this work, and to catalyse further success in 2020, the community energy sector needs:

- **Continued improvements in early stage funding:** to enable development of innovative technologies and innovative business models.
- **Better information and knowledge sharing:** enabling communities to make informed decisions and understand where and how to access emerging opportunities.
- **Capacity building:** providing greater support for expertise development, knowledge sharing and core costs across the sector, reducing time and capacity barriers, promoting professionalisation and increasing long-term impact.
- More effective and standardised methods of **quantifying and articulating the social value and impact of community energy.**

Creacombe Solar Farm - Community Owned Renewable Energy Partners (CORE) and Yealm Community Energy (YCE)

Our detailed research shows there are numerous and varied reasons to be optimistic about the future of the community energy sector in 2020 and onward.

With the additional impacts of COVID-19, the community energy sector is likely to see fewer low carbon projects deployed in 2020. Whilst this may be negative for low carbon ambitions, the sector's response to the crisis demonstrates the vital role community organisations play in supporting and delivering critical local services and maintaining community cohesion.

With the right backing and suitable support mechanisms, community energy organisations can harness the immense passion, ingenuity and commitment of their employees and volunteers, engaging their communities and making sure the low carbon energy transition accelerates and is designed and operated for the benefit of communities and local people across the UK.

Further Information

To find out more about the State of the Sector 2020 and the work of Community Energy England and Community Energy Wales, please visit:

www.communityenergyengland.org www.communityenergywales.org.uk

Or get in touch at:

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The State of the Sector project is built on the efforts and input of community energy practitioners throughout the UK. To ensure that the benefits of this research and the data underpinning it are accessible, transparent and beneficial to the community energy sector, Community Energy England offers an open-access database for community energy practitioners and researchers.

If you are interested in using our data or finding out more about how we can collaborate on future research, please get in touch at:

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