

# What role could community energy play in decarbonising energy and heat?

*Northern Powergrid's response to the Environmental Audit Committee's (EAC) call for evidence*

## KEY POINTS

**We believe that community energy (CE) projects are integral for achieving the UK's net zero emissions' target, and we welcome EAC's call for evidence. Our response is informed by extensive engagement with CE groups. As such, this response is a combination of our views on what should be done while also offering a channel for the community groups in our region to be heard.**

- The main motivation for new and existing CE stakeholders is addressing the climate emergency. They aspire to meet the net zero emissions' target early through local decarbonisation.
- CE schemes bring environmental, economic and social benefits to local communities. They are trusted intermediaries; many focus on supporting vulnerable people and provide services which reduce the cost burden of other organisations.
- CE projects offer the opportunity for communities to directly engage with the energy transition; they have the scope to help build understanding and buy-in to the energy transition and to help communities capture value from the energy transition.
- Similarly, well designed CE projects are a way the most vulnerable in society can engage and benefit from energy transition, as demonstrated by Energise Barnsley and our current Boston Spa Energy Efficiency Trial, which has the scope to offer material savings to all domestic customers in the area.
- Policy gaps and market distortions pose significant barriers to the success of CE schemes and restrict CE project viability. Government departments, Ofgem, and industry should work together, and with CE sector, to address these.
- We believe that the following actions may go some way to enable the growth in CE sector:
  1. bridging the gap between the current policies and policies needed to support the net zero target by taking a joined-up approach to energy policy;
  2. creating a level playing field for all fuels, and ensuring the value stemming from greenhouse gas abatement is consistently reflected in fuel price;
  3. addressing funding gaps in consultation with CE stakeholders; and
  4. removing barriers for groups to set up local supply and peer-to-peer trading projects.
- Organisations with local presence also have a key supporting role in establishing partnerships with CE groups, building their capacity and expertise, and facilitating networking and communication.

## 1. Introducing Northern Powergrid

- 1) Northern Powergrid is the Distribution Network Operator responsible for the electricity network that takes electricity to and from 8 million people across the North East, Yorkshire, and northern Lincolnshire.
  - a. We serve a diverse region through more than 64,000 substations, over 96,000km of overhead power lines and underground cables, which span c.25,000 km<sup>2</sup>.
  - b. A proportion of the money our customers pay to their energy supplier for the electricity they use (around £85 per year on an average domestic customer bill) comes to us to cover the cost of keeping the network running safely, reliably, and efficiently.
- 2) Our role and regional presence means we are a key support organisation for local community energy (CE) groups, and a key link between our communities and the wider energy industry. We have been running an engagement programme for CE groups since 2014, complemented by a fund to support community projects (since 2018, run jointly with Northern Gas Networks). In 2020, we published our Community Energy Engagement Strategy<sup>1</sup>, where we took 26 actions to support the growth in the CE sector across our region by listening, informing, engaging them and advocating for them, based on inputs from 17 CE groups across our region.
- 3) This response is heavily informed by the feedback we have received from CE groups. Since January 2020 we have:
  - a. carried out a Regional Community Energy Study<sup>2</sup>, informed by 20 groups in our region;
  - b. held three CE forums attended by a total of 167 stakeholders;
  - c. set up a Community Energy Stakeholder Panel, comprised of 14 panellists, representative of a wide range of CE stakeholders, and held four sessions;
  - d. participated or spoke at four external CE events, attended by more than 100 stakeholders, capturing their feedback;
  - e. reached over 1,300 stakeholders through our CE webpage<sup>3</sup> and quarterly CE newsletters;
  - f. had c.40 direct conversations with CE groups; and
  - g. engaged with over 11,000 stakeholders on decarbonisation and net zero topics.

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<sup>1</sup> Available from: <https://www.northernpowergrid.com/asset/0/document/5485.pdf>

<sup>2</sup> Available from: <https://www.northernpowergrid.com/asset/0/document/5674.pdf>

<sup>3</sup> Available from: <https://www.northernpowergrid.com/community-energy/>

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## 2. Responses to EAC's consultation questions

### ***Question 1: What contribution could community energy (through renewable power and/or energy efficiency) make to achieving net-zero by 2050 in the energy sector and its potential role in decarbonising the heat and transport sectors?***

- 1) We believe that an increase in CE schemes is an integral component for achieving net zero.
- 2) Our vision set out in our Distribution System Operator (DSO) v1.1 development plan<sup>4</sup> is for a smart, flexible and clean energy system, where electric vehicles are powered by a neighbour's solar panels and where discount on bills are offered for providing power back to the grid, and where batteries kick in automatically to keep homes and businesses running at times of low generation. In this world, the system works to utilise every unit of low-carbon energy in the best way and enables communities and individuals to provide power back to the grid, or take it from locally generated, sustainable sources. This vision remains at the core of our Community Energy Engagement Strategy<sup>1</sup>.
- 3) Our wider stakeholders strongly support decentralisation of the energy system. Most of them are in favour of adopting an accelerated pathway to reach net zero emissions before 2050.
- 4) Besides a key role in emissions' reduction, CE creates added value through economic and social benefits. Our Regional CE Study<sup>Error! Bookmark not defined.</sup> emphasised the local benefits and efficiencies created through scale, local outreach, and behaviour change. In 2019 alone, surveyed CE groups in our region:
  - a. delivered £244,000 in local economic benefits;
  - b. owned 1.85 MW electricity generation capacity, avoiding 497 tonnes of CO<sub>2</sub>e emissions;
  - c. directly supported 18 jobs;
  - d. engaged 2,500 individuals and 55 businesses; and
  - e. delivered energy efficiency improvements with a total value of £400,000.
- 5) This study reflects the impact of 20 CE organisations. We expect that the overall CE contributions in the region are more significant, as the total number of groups is higher.

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<sup>4</sup> Available from: [www.northernpowergrid.com/asset/0/document/5139.pdf](http://www.northernpowergrid.com/asset/0/document/5139.pdf)

- 6) The study was carried out as part of the State of the Sector Report by Community Energy England<sup>5</sup>, which reflects the data for CE contributions across the UK.
- 7) Collaborative effort is needed to ensure decarbonisation delivers better outcomes to everyone. Many CE organisations are trusted intermediaries focussed on the environmental, social, and local economic impacts of our energy system. They support local service provision, such as food banks and charity organisations, and focus on protecting and supporting vulnerable people (e.g. reducing fuel poverty through energy switching and energy efficiency measures). We therefore believe that supporting the growth of CE in our region will help us reach the most vulnerable in our society, and help in ensuring that the energy transition required to meet the net zero target is fair for everyone.
- 8) The Climate Change Committee has also recognised<sup>6</sup> the role that people can and need to play in achieving the legally binding emissions' target.

***Question 2: How well are the financial and technical needs of setting up and running community energy projects met by existing Government support mechanisms? What changes would be needed to the access or nature of support to develop community energy further?***

- 9) The feedback we have received from CE stakeholders indicates that the current support mechanisms are insufficient and inefficient for enabling significant growth in CE. The points below provide a summary of what CE groups have told us, and include a number of barriers which need to be addressed to enable more CE projects.
  - a. Most groups' primary motivation for setting up CE projects is to achieve net zero emissions for their community early. They believe there is a **lack of joined-up approach to energy policy, including lack of ambition and speed to meet carbon neutrality**. The existing policy gap for meeting net zero has also been illustrated by the Climate Change Committee<sup>6</sup>.
  - b. A common concern is that **regulation and relevant fiscal mechanisms do not account for social and environmental (carbon) values**. This is seen as unacceptable in climate emergency.

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<sup>5</sup> Available from: <https://communityenergyengland.org/pages/state-of-the-sector>

<sup>6</sup> Available from: <https://www.theccc.org.uk/wp-content/uploads/2020/12/Policies-for-the-Sixth-Carbon-Budget-and-Net-Zero.pdf>

- i) While communities clearly deliver environmental and social benefits, these are not currently reflected in the energy prices and therefore unlikely to improve the overall (economic) feasibility of their project.
  - ii) There is a market failure stemming from different, inconsistent taxation of different fuels and fuel prices not being reflective of externalities, such as the abatement cost of greenhouse gas emissions.
  - iii) Environmental and social policy costs are disproportionately levied on electricity bills; this has created significant distortions in the market and is leading to inefficiencies and perverse outcomes, including on activities aimed at decarbonisation.
  - iv) It has also been recently highlighted by the National Audit Office, confirming HM Treasury and HM Revenue & Customs have a “limited understanding” of how far the tax system supports government’s environmental objectives.
- c. **Energy policy** (including energy regulation and industry jargon) **is perceived as a very complex** area to engage with.
- d. Groups are keen to create **local supply and balancing projects** – an aspiration closely aligned with the Government’s and Ofgem’s vision of smart and flexible energy system – but **are faced by regulatory barriers** under the current regulatory regime.
- i) CE groups are unlikely to have the capacity to acquire a supplier licence, required to supply more than 2.5MW to domestic premises.
  - ii) A small number of groups have been able to trial local supply through Ofgem’s Sandbox mechanism, but such derogations are unlikely to be scaled up.
  - iii) While a Smart Export Guarantee applies for units of electricity exported, it is much lower than what a (local) customer may pay for the electricity they consume, hence not suitable for building a viable economic model for a CE project. Further, this approach does not guarantee local supply.
  - iv) Private wire is often the only option for this type of activity in the current licensing framework and the most appealing because it deducts from the electricity price the cost of the regulatory overhead and policy costs that would otherwise be levied (i.e. avoiding a ‘tax’ that is then paid by other customers). The effect of this is for the electricity system (and electricity bill payers) to cross-subsidise networks from which they do not benefit – in effect a hidden form of regressive tax.
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- e. **Financial and policy support mechanisms for CE are scarce:**
  - i) Funding opportunities are generally limited to the Rural Community Energy Fund (RCEF) and a few location-specific initiatives.
  - ii) Financial viability of CE generation projects post-Feed-in Tariff is very complicated, although groups are trying to re-invent business models.
  - iii) There are gaps in funding available to:
    - (1) urban CE groups; and
    - (2) emerging groups, to get set up and registered.
- f. Groups funded by RCEF believe they are “being set up to fail”. **In rural areas, connections’ cost is a barrier for project viability.** The CE groups do not believe they should be paying for connection if they are addressing the net zero challenge, and this cost should be subsidised through general taxation.
- g. There is a further **uncertainty about the outcomes of Ofgem’s charging reforms** and their impact on CE schemes, specifically, as communities are not able to change their location in response to locational connections’ cost signals.
- h. More **awareness raising** about CE and decarbonisation is required. There is interest in CE, but many groups are struggling to identify viable projects and lack expertise.
- i. Figures below illustrate the feedback received through our Regional CE Study<sup>2</sup>, which included 20 CE groups. The challenges in our region slightly differ from those facing the wider sector, with **organisational (including volunteer) capacity** identified as a key barrier.

**Barriers reported by community energy organisations in our area**



**Support requested by community energy organisations in our area**



10) Further research is being carried out by the Centre for Sustainable Energy to identify support required for CE organisations in the North East.

**Question 3: What are the main barriers to development of new community energy schemes under the current regulatory regime? Do lack of connection or high access charges to the electricity grid pose an obstacle? How could these be overcome?**

11) Please refer to our response to Question 2 above. The answer provided reflects the views of current and new groups which are looking to set up new or additional CE schemes.

12) Some of the barriers noted above, such as lack of suitable site, lack of expertise, and awareness raising, can be overcome through partnerships – with local authorities, educational institutions, SMEs, and commercial and energy industry stakeholders.

13) Please also refer to our responses to Questions 4 and 6.

**Question 4: What role should Ofgem play in supporting community energy and resolving regulatory issues, such as decentralisation and incorporating community energy projects into smart electricity grids?**

14) New groups believe that, in the context of net zero target, it is unacceptable that networks continue to be regulated based on economic performance only.

15) Groups seeking new connections believe that connections’ cost should reflect social and environmental values and/or be funded through taxation.

16) We think the following actions may go some way in addressing the barriers:

- a. clarifying the outcomes of its charging reforms, thus eliminating the uncertainty CE groups are now facing;

- b. considering the potential adverse impact of cost-reflective locational signals on community projects, as communities cannot change their location; and
- c. working with the Government and industry to:
  - i) remove the barriers for groups to set up local supply and peer-to-peer trading projects; and
  - ii) create a level playing field for all fuels, reflecting the environmental and social value of emissions, and levying them consistently.

17) We are also aware that the response submitted by Community Energy England includes a set of asks to Ofgem.

***Question 5: What role can local authorities play in developing community energy, for example in planning, decision making and the availability of sites for energy generation?***

18) As trusted and local bodies, Local Authorities (LAs) are key support and partner organisations for CE stakeholders.

- a. LAs may have a role in providing direct support to CE groups, such as, but not limited to: providing grant funding, helping groups to identify project sites, supporting local engagement, or even entering into Power Purchase Agreements with CE projects.
- b. Likewise, LAs can signpost to and connect CE groups with other key stakeholders, and facilitate networking between the relevant organisations.

19) The services CE groups provide are reducing the cost burden on LAs and charity organisations. As LAs set out the plans for achieving their net zero targets, CE groups offer an effective outreach channel for involving the local communities and, importantly, an opportunity to reduce emissions through community-led projects, while unlocking local economic and social benefits.

20) There is a strong appetite among the CE groups to be involved in local planning and work in partnership with a range of local stakeholders to set out plans for meeting the net zero target, including actions related to the use of energy.

***Question 6: How can policy ensure that community energy projects maximise their positive impacts (social, environmental, economic) on the local communities?***

21) We believe that addressing the barriers outlined in Questions 2 and 3 will go some way in maximising the benefits from CE projects and enabling the growth in this sector, especially:

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- a. bridging the gap between the current policies and policies needed to support the net zero target;
- b. ensuring the value stemming from greenhouse gas abatement is consistently reflected in pricing of fuels, and thus reflects the net zero target;
- c. removing barriers for groups to set up local supply and peer-to-peer trading projects. We believe these should be carefully considered and well-designed to ensure fair outcomes for all energy customers and avoid any unintentional adverse impacts; and
- d. setting out coherent funding and support mechanisms for CE, created in consultation with these stakeholders.

22) We are also aware that the response submitted by Community Energy England includes a set of policy asks.

***Question 7: What are exemplars of successful community energy systems from across the UK's urban and rural communities; what makes them so successful?***

23) Please refer to the relevant information made available by organisations such as Community Energy England/Wales/Scotland, Regen, and the projects carried out with RCEF support. From our engagement with these organisations, we are aware that the success of many existing CE projects has been enabled by the Feed-in Tariff, which was discontinued in 2019.

24) We have been directly involved in valuable innovation projects with CE groups, such as:

- a. Distributed Storage & Solar Study<sup>7</sup> innovation project, which explored how home batteries could increase capacity on the electricity network and enable more homes to install solar panels in partnership with **Energise Barnsley**<sup>8</sup> CE group. Energise Barnsley have 321 separate solar PV installations in properties owned by Barnsley Council and managed by Berneslai Homes, totalling 1.5MW. These include domestic properties (of which 75% are bungalows, where elderly tenants live, and 25% are residents on pre-payment meter) and 16 non-domestic properties, consisting of schools, sheltered housing blocks, and community buildings. Batteries were installed in a cluster of homes and linked in a virtual power plant to study how this solution can reduce peak solar output onto the electricity networks when there was low local demand, and creating costs savings for the community. The project is an example of how community-led energy can thrive through partnerships, providing

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<sup>7</sup> For more information, please visit: <https://www.northernpowergrid.com/innovation/projects/distributed-storage-solar-study-nia-npg-011>

<sup>8</sup> For more information, please visit: <http://www.energisebarnsley.co.uk/projects/>

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improvements to publicly-owned housing stock as well as energy cost reductions to residents.

- b. Activating Community Engagement**<sup>9</sup> is our award-winning innovation project delivered in partnership with Newcastle University and start-up SME GenGame. It is an example of how communities can be connected to support the low-carbon energy transition without having to invest in energy generation assets. The project was the first ever trial to show how mobile gaming could incentivise households to reduce their electricity consumption at times of high demand. The project sought to understand whether domestic customers could be incentivised to be flexible and make small changes to when and how they used electricity by turning off household appliances during certain periods of the day; it provided important learning on gamification and domestic demand side response solutions, and its potential applications at community scale.
  - c.** Most recently, we have partnered with a local CE group in the **Boston Spa Energy Efficiency Trial**<sup>10</sup>, which aims to trial voltage management on the local network as a method of minimising long-term energy demand. Enabled by the use of smart meters, this improves the energy efficiency of the electricity system and creates cost savings for the local community. We estimate that this approach has the potential to deliver £68-270k cost savings in the Boston Spa trial area, and £128-513m in savings across the UK, if it can be scaled up.
- 25)** Our Regional CE Study<sup>2</sup> contains more examples and case studies of CE projects across our region.

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<sup>9</sup> For more information, please visit: <https://www.npg-ace.com/>

<sup>10</sup> For more information, please visit: [https://www.smarternetworks.org/project/nia\\_npg\\_31](https://www.smarternetworks.org/project/nia_npg_31)

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