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# Energy Security and Net Zero Committee call for evidence on ‘Unlocking community energy at scale’: UK Energy Research Centre (UKERC) Response

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### **About UKERC**

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### **Introduction**

UKERC welcomes this inquiry and the UK government’s ambition to achieve clean power by 2030, including 8GW of local and community-owned energy. GB Energy and the Local Power Plan (LPP) represent a significant opportunity to reinvigorate the community energy (CE) sector in the UK, which has stalled in recent years, largely due to a challenging policy environment since 2015, including removal of the Feed-in-Tariff, restrictions on onshore wind development, and removal of tax relief[[1]](#footnote-1). Increasing the involvement of citizens and communities could help accelerate the energy transition including; increasing public support for net zero[[2]](#footnote-2), speeding up the development process, generating revenues for local community benefit, and creating opportunities for a wide range of consumers to participate in clean energy projects[[3]](#footnote-3).

The call for evidence indicates that community energy refers to energy projects that are ‘community-owned and controlled’. In-line with Community Energy England we advocate for a definition that includes both projects wholly owned and/or controlled by communities *and* shared ownership projects developed through a partnership with commercial or public sector partners[[4]](#footnote-4). While some communities will want to take full ownership and control of renewable energy projects, others may prefer to partner with commercial or public sector developers to address challenges relating to capacity, technical skills, or resources. We do not advocate for including community benefit funds related to fully commercial developer-led projects in any definition of community energy and direct the Committee to Regen’s report for a fuller discussion of shared ownership[[5]](#footnote-5).

We also support the call’s emphasis on community energy including renewable electricity generation, renewable heat, efficient use of local power, energy demand reduction and efficiency projects. CE is not just about generation projects and some of the most exciting community-led work is seeking to integrate across heat, power and transport to deliver a smart, flexible, clean energy system.

### **Response to Questions**

### Q1. How could the Local Power Plan to be produced by Great British Energy build upon existing community energy support schemes, such as the Community Energy Fund?

The increased funding (£400m p.a.) available to community energy under the LPP is welcome. The existing Community Energy Fund in England provides valuable early-stage grant funding for project feasibility and development. This type of support should be retained and expanded to allow more projects to benefit. Combining grant funding with enhanced technical support from GB Energy would be beneficial.

The Community Energy Fund is limited to pre-construction development. The LPP should ensure it provides funding across the project lifecycle[[6]](#footnote-6), including capital funding for construction (as in Scotland and Wales). This could be in the form of low-interest loans, or loan guarantees to help attract private finance. As well as providing long-term (patient) capital, the aim of these loans should be to lower the cost of capital for community schemes. To date, capital loans from state agencies (e.g., the Scottish Energy Investment Fund) have had excessive interest rates, often over the market rate[[7]](#footnote-7). To maximise benefit to consumers in most need, lower interest rates or larger grants could be made available for projects that have the potential to deliver demonstrable benefits to disadvantaged communities[[8]](#footnote-8). These communities are currently under-represented in the community energy sector[[9]](#footnote-9).

Providing a significant share of support through loans will help minimise the fiscal impact of support measures. It is also possible to reduce reliance on the exchequer by exploring how Community Benefit Funds, which typically offer payments of ~£5k per MW installed per annum, could be used to pump prime further community energy projects. These currently account for £25m of community revenue per annum, in Scotland alone[[10]](#footnote-10). Similarly, funds from Ofgem’s RIIO price control (e.g., Strategic Innovation Fund) could help fund innovative community energy projects.

It is also important that the costs of financial support are distributed fairly. Additional costs of support should not be funded through flat rate levies on electricity bills, as in the past. Allocating policy costs directly onto bills is regressive with lower-income households paying proportionately higher costs[[11]](#footnote-11). Alternatives include funding community energy support from general taxation, or linking it to a specific tax. For example, in recent winters, large-scale electricity generators have made excess profits when elevated natural gas prices have driven higher electricity prices[[12]](#footnote-12). A windfall tax could be used to redistribute some of those excess profits to smaller scale community energy projects. Alternatively, if community energy support is funded from energy bill levies, it should be weighted onto gas rather than electricity bills and compensation payments could be made for the poorest households[[13]](#footnote-13).

Innovative schemes such as Project Collette[[14]](#footnote-14) are developing new approaches to the governance and financing of community energy and can provide considerable learning for GB Energy. The project is adopting a shared ownership approach to development of a proposed 1.2GW offshore wind farm off the coast of Cumbria based on a joint venture between Collette’s Community Benefit Society and GB Energy. Additionally, GB Energy support for the establishment of community energy confederations, which can pool resources, could deliver economies of scale while maintaining local community-led direction. Cooperatives, such as Energy4All or Repowering London have proven successful in amplifying the reach and capacity of smaller projects and facilitating larger-scale and/or more impactful projects[[15]](#footnote-15).

GB Energy should collect and publish data on the ownership structures and community benefit arrangements of projects it supports, and consider minimum percentage community ownership requirements related to its support programmes. As a minimum, GB Energy support for shared ownership schemes should require submission of a Collaborative Benefits Report (CBR) within the planning process which outlines engagement carried out with local communities, record of any offer(s), negotiation and acceptance or rejection of an element of shared ownership.

### Q2. How should the energy market and licensing regulations be reformed to enable community energy projects to sell the electricity that they generate to local customers, without the current barriers, and be properly remunerated for doing so? What lessons can be learnt from other jurisdictions?

Numerous innovation programmes, such as Prospering from Energy Revolution and Net Zero Living, have generated learning about the policy and regulatory barriers to more locally integrated energy systems, including CE. A range of hard barriers and frictions restrict distributed energy resources from realising their potential value to the energy system[[16]](#footnote-16), with many barriers relating to retail market arrangements and supply licensing. UK Government and Ofgem have issued calls for evidence on license exemptions and innovation in the retail market, including local supply (see [[17]](#footnote-17),[[18]](#footnote-18), [[19]](#footnote-19)), however reforms remain limited.

We welcome proposed modification P441 to the Balancing and Settlement Code (BSC), which intends to make it regulatorily feasible for community energy projects to sell their electricity to local customers. Supply of renewable energy to local consumers works well in many jurisdictions in the USA and northern Europe[[20]](#footnote-20),[[21]](#footnote-21),[[22]](#footnote-22),[[23]](#footnote-23),[[24]](#footnote-24). In addition, BSC modification P442, currently at implementation stage, raises the threshold for local supply license exemptions to 5MWh, of which 2.5MWh can be sold to domestic consumers. It is estimated that this change could save local and community generators who want to supply locally up to £45 per MWh[[25]](#footnote-25). Given these nascent BSC modifications, multiple relevant call for evidence and slow progress on regulatory reforms, we suggest GB Energy should work with community energy organisations to review regulatory barriers and test the impact of local supply reforms, possibly working with the new Regulatory Innovation Office.

Notwithstanding these modifications, CE organisations providing electricity over the distribution network still need to have some legal status as an electricity supplier. They can become a supplier themselves, or work with a ‘supply partner’ to sell their electricity to consumers. A proposed (but unsuccessful) amendment to the previous government’s Energy Bill, Clause 273, required electricity suppliers to become supply partners to community energy schemes, buying electricity at a price set by Ofgem (see Q3) and selling that electricity at a reduced price to customers local to the generation site. This would be a promising ‘light touch’ approach, that would not require extensive regulatory change. Even if community energy grows as intended by the Local Power Plan, it will remain a minority segment of the energy sector for some time[[26]](#footnote-26). We therefore argue that energy suppliers could absorb the costs of such a requirement, not needing to pass costs on to consumers. For example, the most recent operating profit reported by SSE PLC alone was over £2.4bn - almost 60 times the total revenue (£43m) for the community energy sector[[27]](#footnote-27). Currently, Octopus is the ‘supply partner’ for Energy Local CIC, and other renewable energy generators, via its Fan Club tariff; with local customers benefiting from lower tariffs when local renewables are generating.

Finally, we suggest that some flexibility in the definition of ‘local’ supply should be allowed, to give regard to the different spatial impacts of technologies; for example, onshore wind turbines that may be visible for some distance, compared to rooftop solar PV, or differences in perceptions of ‘local’ from one locality to another[[28]](#footnote-28), [[29]](#footnote-29). We also recommend that in framing any relevant regulations, ‘community energy’ should be defined so as to include any project (partly or wholly) owned by citizens, even if many, or the majority of, citizen owners are not local to the installation. Many successful existing projects combine citizen action in multiple geographies in this way, such as the Energy4All network of cooperatives, or the Big Solar Co-op. These multi-scale models offer a combination of local engagement, a key strength of community energy, with economies of scale which solely-local organisations might not achieve. Under the Local Power Plan, it should still be possible for these kinds of projects to offer preferential tariffs to energy customers who are local to the installation.

### Q3. How could existing government support mechanisms, such as the Smart Export Guarantee, provide community energy projects with more financial certainty?

Revenue certainty is a key enabler for many CE schemes. The Smart Export Guarantee (SEG) replaced the Feed-in-Tariff for renewable electricity but offers: a) revenue for only exported electricity (the FiT included generation and export); b) no minimum export price; and c) no long-term certainty beyond a 12-month period (the FiT offered 20-year contracts).

Whilst the levelised cost of renewable electricity generation has fallen and the need for subsidy reduced, this policy change has still reduced the security of revenue for CE projects, raising the risk profile of projects, and resulting in higher financing costs. We recommend that the SEG should be reformed to include a ‘floor price’ (a minimum payment per exported kilowatt-hour), a generation payment and longer-term contracts. Additionally, the ‘unbundled’ SEG export tariffs available to community energy generators from electricity suppliers averaged just 4.3p/kWh in 2023-24[[30]](#footnote-30), while wholesale electricity prices ranged from 6-14p/kWh. In contrast, the Feed-in Tariff Scheme paid at least 5p/kWh for *all* generated energy, which was roughly equivalent to typical wholesale prices at that time. SEG export tariffs could therefore be usefully indexed to wholesale electricity prices, to better reflect the value of exported electricity to the grid. Ofgem should also set minimum prices for community energy under the SEG with a ‘Community SEG’ offered to organisations that can demonstrate community benefit and a meaningful degree of democratic community ownership[[31]](#footnote-31).

A robust definition of community energy is necessary to determine which projects qualify for community energy support schemes, including grants, tax breaks and regulatory benefits[[32]](#footnote-32). Without a clear definition, there is a risk of commercial developers posing as community organisations to access subsidies or other incentives, undermining genuine community-driven projects. The definition should address legal structures, ownership, voting rights and local membership, and should be developed and tested with the CE sector.

We further recommend that government support mechanisms should include payments for demand-side projects. Reducing energy demand can be rapid and cost-effective way to achieve net zero and energy security goals[[33]](#footnote-33), [[34]](#footnote-34), [[35]](#footnote-35). An Energy Saving FiT could support community retrofit and energy services models, like Brighton and Hove Energy Services Coop (BHESCo) Pay As You Save (PAYS). In this model, the property owner does not bear the upfront capital cost of retrofit measures but pays these back over time, through the energy savings they generate, via an energy performance contract. These projects are very valuable for the energy transition, but are bespoke, involving high transaction costs (Hannon et al 2023: 9). While recent high energy prices have increased the economic viability of projects, an Energy Saving FiT (ESFiT) would offer a fixed price subsidy for each unit of energy saved, providing investors with certainty about the return on investment of energy demand projects[[36]](#footnote-36).

### Q4. What are the regulatory solutions needed to minimise the high costs and long delays incurred in securing a grid connection for community energy projects?

We highlight that NESO’s recent advice to Government suggests most of the low carbon capacity required for the CP2030 target is already in the connections queue, risking new CE projects being unable to proceed. CE and consumer protection agencies, recently wrote to the Secretary of State advocated for community energy and shared ownership projects to be designated as ‘needed’ for 2030 and ensure that this is recognised in the connections reform process[[37]](#footnote-37). Supporting shared ownership will help to ensure community benefit and support for existing projects in the connections queue but there is also a need to ensure new wholly-community owned projects are able to connect.

The complexity of connections processes can be a key barrier to community energy. While many DNOs have specific personnel to assist projects through the process, the information available from DNOs is often insufficient, out of date or complex to understand e.g., heat maps. We encourage a requirement for DNOs to have an up-to-date information portal for community energy projects with specific local contact personnel to assist in feasibility and scoping.

The distinction between processes for connection types (G99 vs G98) may artificially constrain the size of CE projects, as they may seek to undersize to reduce the cost/complexity of the connections process and accelerate connection. While the technical requirements for this distinction are justified, they may act as a soft limit to project designs. This could be reduced by the provision of financial and in-kind support to CE projects which are likely to require additional studies to meet connection requirements.

Lastly, a networks-led approach to connections could be considered, whereby DNOs actively seek to promote the availability of future network capacity to potential CE project developers, for example where network investment and upgrades are being implemented due to increased electricity demand. Similarly, where network upgrades are being designed around known expansion needs (e.g., projected heat pump/EV uptake) a requirement could be added to include a proportional volume of additional generation capacity within the design process, to be made available to community energy developments as the installation of network progresses.

### Q5. Should the local benefits of community energy projects be formally recognised as a material consideration in planning decisions?

Government should carefully consider the arguments for updating how ‘material considerations’ are determined in CE planning decisions. However, there are longstanding difficulties in linking community benefit contributions with the decision to grant planning permission. We do not comment on the details of planning law but note that two Supreme Court judgements[[38]](#footnote-38) have indicated that community benefits should not be a material consideration in renewable energy planning decisions due, in part, to potential to breach the principle that planning permission cannot be bought or sold. It is also likely that any change would need to apply to all energy projects delivering community benefits, rather than solely community energy projects. Various policy guidance has made clear that any additional or shared financial or in-kind community benefits should not be viewed as compensation[[39]](#footnote-39).

Many local plans and associated development plan documents (DPDs) already make provision for ‘significant weight’ to be given to community-led energy schemes which demonstrate evidence of community support. It is also important to recognise that the benefits of community energy projects go well beyond simple financial considerations to include co-benefits such as addressing local fuel poverty and fostering citizen engagement[[40]](#footnote-40). Government planning policy should support local planning authorities to consistently include provisions on community benefits in planning policy, and provide guidance on how evidence should be assessed.

### Q6. What should be the role of Neighbourhood Plans and Local Area Energy Plans in building local support for community energy projects?

Local energy planning (LAEP and wider spatial planning) can support local authorities to work with developers and community organisations to identify sites and opportunities for community energy projects and shared ownership. Additionally, innovation pilots, such as Project LEO[[41]](#footnote-41), indicate that the granular, geo-spatial evidence collected to prepare LAEPs can play an important role in justifying network investment ‘ahead of need’ and speed up the development process. However, we note that there is no requirement to consistently prepare LAEP in England[[42]](#footnote-42), and UKERC research indicates that there is limited evidence of localities integrating local energy planning and wider spatial planning, or of comprehensive community engagement in LAEPs[[43]](#footnote-43) [[44]](#footnote-44) [[45]](#footnote-45).

Scenario-based plans such as LAEP, can foster public engagement in net zero, and local community involvement will maximise possibilities for local acceptance of energy projects[[46]](#footnote-46). Local publics should be involved in the early phase of constructing LAEPs[[47]](#footnote-47), however, designing and undertaking public engagement requires resources. Projects such as Community-Led Energy Planning[[48]](#footnote-48) (Oldham) and CAPZero[[49]](#footnote-49) (Oxfordshire) provide some evidence of how communities can be included in local energy planning. Additionally, there is current momentum for local Citizen Climate Assemblies[[50]](#footnote-50) and LAEPs could provide important evidence in constructing such regional/local community engagements.

The most recent Ofgem Regional Energy Strategic Plan (RESP) consultation suggested that NESO will support local stakeholders to participate in energy planning in their local and regional area. It is not yet clear the extent to which the RESP process will provide direct tools and support to local authorities or community groups, however we advocate for LAEP data and tools to be made widely accessible to community groups. CE organisations should be closely involved in the development of RESP functions.

### Q7. What is the potential for community energy to incentivise consumer demand flexibility at the scale needed to achieve the UK’s net zero targets?

CE organisations are increasingly becoming involved in smart, flexible energy systems[[51]](#footnote-51). Realising demand flexibility will require consumers to install new technologies and engage with new tariffs. Consumer wariness around installing heat pumps, for example, highlights the need for support along the ‘consumer journey’, from decision-making, through installation to operation. CE’s potential to play a role in this support is being recognised by local authorities e.g., Energy Saving Devon partnership, and Energise Barnsley[[52]](#footnote-52). Additionally, Energy Local is running several pilot schemes linking small-scale low-carbon generation to local energy consumption, enabling consumers to engage with demand-side response and smart metering. Community energy organisations may also have a role to play in acting as aggregators, helping households secure the benefits and manage the risks of the transition to a smart energy system.

CE organisations could also play new roles in managing distribution networks via local optimisation and flexibility. Northern Powergrid’s Community DSO[[53]](#footnote-53) demonstrator (2023-2028) is developing and trialling a framework for Community Distribution Operation which could empower communities to have greater control over their energy and assets. The project is funded by Ofgem's Network Innovation Competition (NIC) and the findings of the project should be integrated into Government policy.

As part of building trust, there is a role for the regulator and policymakers to ensure strong consumer protection for households and communities participating in flexibility markets[[54]](#footnote-54). As outlined in Q2 CE should be supported to identify and access routes to market for generation, demand reduction and flexibility. Many current flexibility markets are not well suited to smaller projects and we welcome NESO’s ongoing demand-side flexibility routes to market review[[55]](#footnote-55).

1. # Community Energy England (2024) [Response to the Call for Evidence on Barriers to Community Energy Projects](https://communityenergyengland.org/files/document/956/1719589727_CEEresponsetothebarrierstocommunityenergyprojectscallforevidence.docx).

   [↑](#footnote-ref-1)
2. Hogan, J. L. (2024). [Why does community ownership foster greater acceptance of renewable projects? Investigating energy justice explanations](https://doi.org/10.1080/13549839.2024.2360716%20). *Local Environment*, *29*(9), 1221–1243. [↑](#footnote-ref-2)
3. ### Regen (2024) [Is the ‘Local Power Plan’ part of the ‘Clean Power 2030 Plan’?](https://www.regen.co.uk/is-the-local-power-plan-part-of-the-clean-power-2030-plan/)

   [↑](#footnote-ref-3)
4. # Community Energy England (2024) [Our How To section for all things community energy](https://communityenergyengland.org/how-to-pages/definition-benefits-and-potential-of-community-energy).

   [↑](#footnote-ref-4)
5. Regen (2024) [Sharing power: Unlocking shared ownership for a fast and fair net zero transition](https://www.regen.co.uk/wp-content/uploads/2024-19-11-Sharing-Power-Regen.pdf). [↑](#footnote-ref-5)
6. Hannon, M., Cairns, I., Braunholtz-Speight, T., McLachlan, C., Mander, S., Hardy, J., Sharmina, M. (2023) [Carrots, sticks and sermons: Policies to unlock UK community energy finance](https://doi.org/10.1016/j.erss.2023.103086). *Energy Research and Social Science,* 100. [↑](#footnote-ref-6)
7. Cairns, I., Hannon, M., Braunholtz-Speight, T., McLachlan, C., Mander, S., Hardy, J., Sharmina, M., & Manderson, E. (2023). [Financing grassroots innovation diffusion pathways: the case of UK community energy](https://doi.org/10.1016/j.eist.2022.11.004). *Environmental Innovation and Societal Transitions*, 46, 100679. [↑](#footnote-ref-7)
8. Hannon, M., et al., (2023) [Carrots, sticks and sermons: Policies to unlock UK community energy finance](https://doi.org/10.1016/j.erss.2023.103086). *Energy Research and Social Science,* 100. [↑](#footnote-ref-8)
9. # Stewart, F. (2021) [All for sun, sun for all: Can community energy help to overcome socioeconomic inequalities in low-carbon technology subsidies?](https://doi.org/10.1016/j.enpol.2021.112512) *Energy Policy* 157.

   [↑](#footnote-ref-9)
10. Scottish Government (2024) [Register of Community Benefits](https://localenergy.scot/wp-content/uploads/2024/04/CB-Register-narrative-report-Feb-24-FINAL.pdf.). [↑](#footnote-ref-10)
11. Nesta (2024) [Household energy bills include green levies. What are they and why do we need to pay them](https://www.nesta.org.uk/household-energy-bills-green-levies/)? [↑](#footnote-ref-11)
12. Maximov, S. A., Drummond, P., McNally, P. & Grubb, M. (2023) [Where does the money go? An analysis of revenues in the GB power sector during the energy crisis](https://doi.org/10.36687/inetwp207). Working Paper 207, University College London and Institute for New Economic Thinking. [↑](#footnote-ref-12)
13. Priesmann, J., Spiegelburg, S., Madlener, R. & Praktiknjo, A., 2022. [Does renewable electricity hurt the poor? Exploring levy programs to reduce income inequality and energy poverty across German households.](https://doi.org/10.1016/j.erss.2022.102812) *Energy Research & Social Science*, 93. [↑](#footnote-ref-13)
14. Green Finance Community Hub (2024) [Project Collette](https://greenfinancecommunityhub.co.uk/project-collette/). [↑](#footnote-ref-14)
15. Cairns, I., Hannon, M., Braunholtz-Speight, T., McLachlan, C., Mander, S., Hardy, J., Sharmina, M., & Manderson, E. (2023). [Financing grassroots innovation diffusion pathways: the case of UK community energy](https://doi.org/10.1016/j.eist.2022.11.004). *Environmental Innovation and Societal Transitions*, 46. [↑](#footnote-ref-15)
16. Hardy, J.; Britton, J. and Sandys, L. (2023) [Enabling Decentralised Energy Innovation](https://www.ukri.org/publications/enabling-decentralised-energy-innovation/), Innovate UK. [↑](#footnote-ref-16)
17. # UK Government (2021) [Exemptions from the requirement for an electricity licence: call for evidence](https://www.gov.uk/government/calls-for-evidence/exemptions-from-the-requirement-for-an-electricity-licence-call-for-evidence).

    [↑](#footnote-ref-17)
18. # UK Government (2023) [Towards a more innovative energy retail market: a call for evidence](https://www.gov.uk/government/calls-for-evidence/towards-a-more-innovative-energy-retail-market-a-call-for-evidence).

    [↑](#footnote-ref-18)
19. Ofgem (2024) [Innovation in the energy retail market: consultation](https://www.ofgem.gov.uk/consultation/innovation-energy-retail-market). [↑](#footnote-ref-19)
20. Yildiz, Ö. (2014). [Financing renewable energy infrastructures via financial citizen participation - The case of Germany.](https://doi.org/10.1016/j.renene.2014.02.038) *Renewable Energy,* 68, 677–685. [↑](#footnote-ref-20)
21. Simcock, N., Willis, R. & Capener, P. (2016) [Cultures of Community Energy: International case studies](https://www.thebritishacademy.ac.uk/publications/cultures-community-energy-international-case-studies/). British Academy. [↑](#footnote-ref-21)
22. Curtin, J., McInerny, C. & Johansdottir, L. (2018) [How can financial incentives promote local ownership of onshore wind and solar projects? Case study evidence from Germany, Denmark, the UK and Ontario](https://doi.org/10.1177/0269094217751868). *Local Economy*, 33(1) 40–61. [↑](#footnote-ref-22)
23. Homsy, G. (2016) [Powering sustainability: municipal utilities and local government policymaking](https://doi.org/10.1177/0263774X15596530). *Environment and Planning C: Government and Poli*cy, 34(6), 1076–1094. [↑](#footnote-ref-23)
24. Klass, A. and Wilton, R. (2022) [Local Power](https://scholarship.law.vanderbilt.edu/vlr/vol75/iss1/2). 75 Vanderbilt Law Review 93. [↑](#footnote-ref-24)
25. Ofgem (2024) [Approval of BSC Modification P442](https://www.ofgem.gov.uk/sites/default/files/2024-05/Ofgem_decision_for_BSC_P442_Modification.pdf). [↑](#footnote-ref-25)
26. Braunholtz-Speight, T., Sharmina, M., Pappas, D., Webb, J., Hannon, M. & Fuentes González, F. (2022). [Beyond the pilots: Current local energy systems in the UK](https://www.energyrev.org.uk/media/1976/energyrev-currentuksles_202205final2.pdf). Energy Revolution Research Centre, Strathclyde, UK. [↑](#footnote-ref-26)
27. Community Energy England (2024) [2024 Community Energy State of the Sector report](https://communityenergyengland.org/pages/state-of-the-sector). [↑](#footnote-ref-27)
28. Braunholtz-Speight, T., Sharmina, M., Pappas, D., Webb, J., Hannon, M. & Fuentes González, F. (2022). [Beyond the pilots: Current local energy systems in the UK](https://www.energyrev.org.uk/media/1976/energyrev-currentuksles_202205final2.pdf). Energy Revolution Research Centre, Strathclyde, UK. [↑](#footnote-ref-28)
29. Walker, C., Devine-Wright, P., Rohse, M., Gooding, L., Devine-Wright, H. & Gupta, R (2021) [What is ‘local’ about Smart Local Energy Systems? Emerging stakeholder geographies of decentralised energy in the United Kingdom](https://doi.org/10.1016/j.erss.2021.102182). [↑](#footnote-ref-29)
30. Ofgem (2024) [Smart Export Guarantee (SEG) Annual Report](https://www.ofgem.gov.uk/sites/default/files/2024-10/Smart_Export_Guarantee_Annual_Report_SEG_Year_4.pdf). [↑](#footnote-ref-30)
31. Environmental Audit Committee (2021) [Technological Innovations and Climate Change inquiry: removing the barriers to the development of community energy](https://committees.parliament.uk/work/1047/technological-innovations-and-climate-change-community-energy/). [↑](#footnote-ref-31)
32. Hannon, M., Cairns, I., Braunholtz-Speight, T., Hardy, J., McLachlan, C., Mander, S., & Sharmina, M. (2023) [Carrots, sticks and sermons: policies to unlock community energy finance in the UK](https://doi.org/10.1016/j.erss.2023.103086). *Energy Research and Social Science* 100. [↑](#footnote-ref-32)
33. Larkin, A., Kuriakose, J., Sharmina, M., & Anderson, K. (2017). [What if negative emission technologies fail at scale? Implications of the Paris Agreement for big emitting nations](https://doi.org/10.1080/14693062.2017.1346498). *Climate Policy*, 18(6), 690-714. [↑](#footnote-ref-33)
34. Bermingham, R. et al. (2023) [Net zero society: scenarios and pathways: How could societal changes affect the path to net zero?](https://assets.publishing.service.gov.uk/media/642d85fcfbe620000c17dd71/Net_Zero_Society_Report_2023.pdf) Government Office for Science, Foresight report. [↑](#footnote-ref-34)
35. Sharmina, M., and Capper, T. (2023) [Strengthening the UK’s energy resilience and security](https://www.policy.manchester.ac.uk/publications/on-resilience/). in On Resilience. University of Manchester, UK, pp. 6-9. [↑](#footnote-ref-35)
36. UKERC (2012) [Feed-in Tariffs: the energy saving option](https://ukerc.rl.ac.uk/publications/policy_briefing_paper/Policy_Briefing-Feed-in_Tariffs_the_energy_saving_option.pdf). [↑](#footnote-ref-36)
37. Regen (2024) [Is the ‘Local Power Plan’ part of the ‘Clean Power 2030 Plan’?](https://www.regen.co.uk/is-the-local-power-plan-part-of-the-clean-power-2030-plan/)/ [↑](#footnote-ref-37)
38. # Pinsent Masons (2019) [Supreme Court: community benefits not planning 'material consideration](https://www.pinsentmasons.com/out-law/news/supreme-court-community-benefits-not-planning-material-consideration)

    [↑](#footnote-ref-38)
39. Scottish Government (2024) [Community Benefits from Net Zero Energy Developments: Consultation](https://www.gov.scot/publications/community-benefits-net-zero-energy-developments-consultation/). [↑](#footnote-ref-39)
40. Parkhill, K. A., Shirani, F., Butler, C., Henwood, K. L., Groves, C., & Pidgeon, N. F. (2015). [‘We are a community [but] that takes a certain amount of energy’: Exploring shared visions, social action, and resilience in place-based community-led energy initiatives](https://doi.org/10.1016/J.ENVSCI.2015.05.014). *Environmental Science & Policy*, 53, 60–69. [↑](#footnote-ref-40)
41. Local Energy Oxfordshire (2023) [Project LEO final report](https://doi.org/10.24384/wapg-qd24). [↑](#footnote-ref-41)
42. # Requirements for local energy planning vary across England, Scotland and Wales, as described in UKERC research: Britton J. & Webb, J. (2024) [Institutional Work and Social Skill: The Formation of Strategic Action Fields for Local Energy Systems in Britain](https://ukerc.ac.uk/publications/institutional-work-and-social-skill-the-formation-of-strategic-action-fields-for-local-energy-systems-in-britain/), UKERC.

    [↑](#footnote-ref-42)
43. Britton, J.; Webb, J.; Hawker, G.; Broad, O. & Chaudry, M. (2023) [Energy Modelling Across Scales Stakeholder Workshop Summary](https://ukerc.ac.uk/publications/energy-modelling-across-scales-workshop-summary/), UKERC. [↑](#footnote-ref-43)
44. Britton, J. & Webb, J. (2024) [Planning Works: Local Energy Planning to Accelerate Net Zero](https://ukerc.ac.uk/publications/planning-works-local-energy-planning-to-accelerate-net-zero/), UKERC. [↑](#footnote-ref-44)
45. Poulter, H., Britton, J., Rattle, I., Bolton, R., Webb, J., & Taylor, P. (2025). [Accelerating transitions? Planning for decarbonisation in local and regional energy systems](https://doi.org/10.1016/J.ERSS.2024.103875). *Energy Research & Social Science*, *120*. [↑](#footnote-ref-45)
46. Pidgeon, N.F., Demski, C.C, Butler, C., Parkhill, K.A. & Spence, A. (2014) [Creating a national citizen engagement process for energy policy](https://doi.org/10.1073/pnas.1317512111). *Proceedings of the National Academy of Sciences of the USA*, 111. [↑](#footnote-ref-46)
47. Pidgeon, N.F., Groves, C., Cherry, C., Thomas, G., Shirani,F. & Henwood, K.L (2022) ‘A little self-sufficient town close to the beach’: local energy system transformation through the lens of place and public things. In J. Webb, M. Tingey and F. Wade et al (eds) [Research Handbook of Energy and Society](https://www.research.ed.ac.uk/en/publications/research-handbook-on-energy-and-society). Edward Elgar. [↑](#footnote-ref-47)
48. Carbon Co-op (2022) [Community-led Energy Planning toolkit launched](https://carbon.coop/2022/06/community-led-energy-planning-toolkit-launched/). [↑](#footnote-ref-48)
49. Low Carbon Hub (2024) [Community Action Plan for Zero Carbon Energy](http://www.lowcarbonhub.org/cap-zero/). [↑](#footnote-ref-49)
50. Smith, G. (2024) [We Need to Talk about Climate](https://www.fulcrum.org/concern/monographs/w9505348p). London: University of Westminster Press. [↑](#footnote-ref-50)
51. Cairns, I., Hannon, M., Braunholtz-Speight, T., Hardy, J., McLachan, C., Mander, S., Manderson, E., & Sharmina, M. (2020). [Financing Community Energy Case Studies: Green Energy Mull](https://doi.org/10.17868/69788). [↑](#footnote-ref-51)
52. Braunholtz-Speight, T., Sharmina, M., Pappas, D., Webb, J., Fuentes-Gonzalez, F., & Hannon, M. (2024) [Smart power to the people: Business models for engaging domestic energy users in smart local energy systems in Britain.](https://doi.org/10.1016/j.erss.2024.103443) *Energy Research and Social Science*, 110. [↑](#footnote-ref-52)
53. Northern Powergrid (2024) [Community DSO](https://www.northernpowergrid.com/community-dso). [↑](#footnote-ref-53)
54. Capper, T., Kuriakose, J. and Sharmina, M. (2024) [Facilitating domestic demand response in Britain’s electricity system](https://doi.org/10.1016/j.jup.2024.101768), Utilities Policy, vol. 89, 101768. [↑](#footnote-ref-54)
55. NESO (2024) [Demand Side Flexibility Routes to Market Review](https://www.neso.energy/publications/markets-roadmap/demand-side-flexibility-routes-market-review#Stage-2). [↑](#footnote-ref-55)