Future of Distributed Flexibility Ofgem Consultation
Sussex Energy Group response

A response to selected questions from the Future of Distributed Flexibility consultation by Dr Marie Claire Brisbois, Co-Director of Sussex Energy Group and Senior Lecturer in Energy Policy at the Science Policy Research Unit, University of Sussex.

Researchers at Sussex Energy Group are driven by an interest in accelerating the transition towards a more sustainable energy future. Our primary focus is on the processes of innovation – both technological and social – that will contribute to this objective, using a range of multi-disciplinary social science approaches.

We welcome the opportunity to contribute to this Ofgem consultation. We hope that the following insights from Dr Brisbois's recent and ongoing research will provide useful input and would be delighted to contribute further to Ofgem's work in this area.

This response argues that:

- Focusing on **CER flexibility will help enable DER flexibility** and enable significant savings to be made (Q2)
- Viewing **owners and operators of CER as active decision-makers and agents,** and building their **trust in the system,** is important when designing institutional delivery models for a common digital energy infrastructure (Q10)

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1. What do you think distributed flexibility could contribute to the energy system?

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2. Will a focus on CER flexibility also help enable other forms of flexibility, especially distributed flexibility?

Yes. There is significant private capital at the household level being invested in CER. Research in the US indicates billions in savings from transmission loss reduction and reduced need for transmission

infrastructure by maximising and integrating DER and CER.[1] While the precise calculations differ, the basic arguments are applicable to the UK.

3. Is there a 'case for change' and a need for a common vision for distributed flexibility?

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4. What is your vision for how to accelerate the delivery of accessible, coordinated and trusted markets for distributed flexibility?

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5. Will certainty of an end vision help accelerate enabling work and make it cohesive?

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6. When should a common digital energy infrastructure be in place? And therefore, when should development begin?

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7. What should a common digital energy infrastructure look like, and why? Please consider the archetypes or develop your own proposition.

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8. What is your view on the desirability and feasibility of the archetypes or your own alternative proposition?

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9. Should a common digital energy infrastructure be new-build, or should it build-out from existing infrastructure?

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10. What are the important areas for consideration when designing institutional delivery models for a common digital energy infrastructure?

Integrating CER and DER requires a shift from viewing the owners and operators of CER as consumers to viewing them as active decision-makers whose behaviour will have system-wide impacts. Rational actor behaviour models poorly describe the behaviour of CER owners.[2] This is relevant because delivery models will need to account for the fact that behaviours required of CER owners will need to be coordinated (e.g. remembering or deciding to plug in EVs, or clearing snow from solar panels). Research on coordinating activities to maximise the use of a common resource indicates that outcomes can be optimised by including relevant decision-makers in wider decisions and ensuring sufficient capacity and knowledge.[3] Trust in the system will also be essential, which means creating legitimate market structures where participants are confident that their private data and resources will not be unjustly exploited to extract profits for corporate actors.[4]

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[1] Clack, C. T., Choukulker, A., Coté, B., McKee, S. A (2020). Why local solar for all costs less: A new roadmap for the lowest cost grid - Executive Summary. 2020. https://www.vibrantcleanenergy.com/wp-content/uploads/2020/12/WhyDERs_ES_Final.pdf

[2] Hargreaves, T., & Middlemiss, L. (2020). The importance of social relations in shaping energy demand. *Nature Energy*, *5* (3), 195-201. https://www.nature.com/articles/s41560-020-0553-5

[3] Brisbois, M. C. (2020). Decentralised energy, decentralised accountability? Lessons on how to govern decentralised electricity transitions from multi-level natural resource governance. *Global Transitions*, *2*, 16-25. https://www.sciencedirect.com/science/article/pii/S2589791820300013

[4] Brisbois, M. C. (2022). Governing Decentralized Electricity: Taking a Participatory Turn. *The 4Ds of Energy Transition: Decarbonization, Decentralization, Decreasing Use and Digitalization*, Wiley Online Library. 325-346. https://onlinelibrary.wiley.com/doi/abs/10.1002/9783527831425.ch15

11. What are the important areas for consideration when designing financial delivery models for a common digital energy infrastructure?

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