



Ofgem Call for Input: Future of local energy institutions and governance

UKERC Consultation Response

Dr Helen Poulter (UKERC, University of Edinburgh)

Dr Jess Britton (UKERC, University of Edinburgh)

Professor Janette Webb (UKERC, University of Edinburgh)

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Introduction to UKERC

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1. Introduction

We welcome this Call for Input and proposed engagement work on an area we consider vital for the UK to meet its decarbonisation targets. Within our responses in section 2, we highlight three main areas for consideration:

1. The future of local energy institutions and governance cannot be considered in isolation. We welcome Ofgem's acknowledgement that local area energy planning will play an important role, and we suggest that this call needs to be considered in conjunction with calls for a statutory duty to be placed on local government to produce local energy plans. Our research also recognises the vital role that regional coordination and planning will play in meeting decarbonisation targets, and again we welcome Ofgem's acknowledgement of this via the whole system planning function in Model 3.
2. An energy system/market which includes a significant proportion of decentralised and distributed resources needs to place the customer at the centre. To create a fair and just system the customer needs to become an active and engaged member of this system. This requires trust in energy system institutions and governance, and we call for processes that are open and transparent, so encouraging trust. We also suggest that to encourage engagement, the delivery of customer information on aspects of the energy system transition should be considered as a system function, to be carried out by a trusted partner.
3. In times of rapid change, creating certainty and reducing risk is of consequence and can be achieved by looking at ease of implementation and suggesting frameworks that are quick to implement. However, reducing risk and creating certainty for energy system actors can also be achieved by promptly choosing which model to implement, thereby clarifying future roles and responsibilities via expected timelines and milestones. Therefore, we suggest that new legislation and length of time to implement should not be considered as a risk when choosing the most appropriate future model.

We appreciate your time and would be happy to talk further about any matters raised.

2. Consultation question responses

2.1 Strategic energy context

- 1. Are the three energy system functions we outline (energy system planning, market facilitation of flexible resources and real time operation of local energy networks) the ones we should be focusing on to address the energy system changes we outline?**

We agree that the functions outlined are the necessary focus for energy system change. We also suggest adding a further function, that of customer information. As systems include more distributed resources, customers (i.e. consumers and other stakeholders) become a central focus. For a distributed energy system to work at optimal efficiency and to benefit *all* customers, it is necessary for customers to become engaged and active within the system itself¹. In Australia, where the electricity grid is experiencing rapid decentralisation due to the uptake of domestic solar and storage technologies, research has highlighted the importance of educating customers about what is meant by ‘active and engaged’, why this is needed for a fair and just energy system and, more importantly, the need for a *trusted* partner to deliver this information². We suggest that access to independent information is needed as an institutional function and that the ‘trusted partner’ should be a public body, such as Citizen’s Advice or local government, both of whom already have some capacity in this role, or as an additional function for the suggested independent regional system planner. In deciding which institution should deliver the role, the focus should be on a single point of contact for all information on system transition for simplicity, and the point of contact should be considered a trustworthy source.

- 2. Do you agree with the criteria we have set out for assessing the effectiveness of institutional and governance arrangements?**

We agree with the criteria used and would add that ‘Credibility’ should also include open and transparent decision making, therefore providing ‘Credibility and Trust’. Trust in energy institutions is a vital component for encouraging customer engagement with new business models and behaviours^{2,3} and encouraging companies to develop a sustainable licence to operate⁴.

¹ Hoggett, R. (2017) People, Demand and Governance in Future Energy Systems. [Access here](#).

² Energy Consumers Australia. (2020). Power Shift Final Report. [Access here](#).

³ Hall, S., Anable, J., Hardy, J., Workman, M., Mazur, C., & Matthews, Y. (2021). Matching consumer segments to innovative utility business models. *Nature Energy*, 6(4), 349–361. [Access here](#). 1

⁴ Sustainability First, 2020. Developing and Embedding a Sustainable Licence to Operate and a Purposeful Business Approach. [Access here](#).

2.2 Strategic case for change

3. Do you agree with our assessment of how far the current institutional arrangements are, or are not, well suited to deliver the three key energy system functions?

We largely agree with the assessment of current arrangements but would point out that as this call for input is aimed at understanding what would be needed to facilitate a more customer-focussed distributed system, then the language used to assess the frameworks may need to be more clearly defined. In the document there is focus on lowest cost/efficient outcomes. However, lowest cost may not always be the best value when assessing which frameworks are the most beneficial to customers and/or decarbonisation priorities. Additionally, costs and efficiency may vary over different timescales.

4. Overall, what do you consider the biggest blocker to the realisation of effective energy system planning and operation at sub-national level?

We agree with the blockers to sub-national energy system operation and planning identified in the call for input. Specifically, a lack of clarity with regard to the roles and responsibilities of agencies at the sub-national level, and ineffective coordination between actors and scales. We find that there is an absence of a robust framework that could facilitate local action and think that clarity is needed on the expectation of local authorities⁵. Local Authorities are being encouraged to create Local Area Energy Plans (LAEPs) and networks are encouraged to take account of local planning in their Business Plans but, as Ofgem rightly point out in paragraph 3.8, a lack of resource and skills for some locations risks these areas being left behind. We agree with paragraphs 3.10-3.14 that there is a lack of coordination and oversight and so welcome the idea of a regional system planner, which may help to alleviate some of the conflicts and challenges associated with local energy planning^{6,7}.

We particularly emphasise the potential role of local and regional energy system planning in addressing these co-ordination challenges and wish to highlight that, although the call for input is focussed on the regulation and governance of electricity distribution systems, it is impossible to entirely separate the proposals in the call from wider challenges regarding the local governance of net zero, many of which are beyond the remit of Ofgem. In particular, local energy planning goes beyond electricity network planning to incorporate transport decarbonisation, heat networks and hydrogen. There is also a need for local energy planning to integrate, not just technocratic assessments of least cost measures, but other non-energy system co-

⁵ M. Morris et al., 2022. Working Paper 3: Decarbonisation of heat: how SLES can contribute. [Access here](#).

⁶ Beermann, J., Tews, K., 2017. Decentralised laboratories in the German energy transition. Why local renewable energy initiatives must reinvent themselves. J. Clean. Prod. 169, 125–134. [Access here](#).

⁷ Krog, L., Sperling, K., 2019. A comprehensive framework for strategic energy planning based on Danish and international insights. Energy Strategy Reviews. [Access here](#).

benefits^{8,9}. Our research has indicated that these local co-benefits can be very significant and that investment in local government officer time and technical support to plan energy system decarbonisation has the ability to leverage finance from the private sector at a 1:37 investment ratio¹⁰. Currently the absence of any statutory duty on local government to develop energy or net zero plans is resulting in a wide variety of approaches across Great Britain, and our research has indicated that there are capacity gaps in the ability of local government to deliver net zero^{11,12}.

Any changes to roles and responsibilities for network planning and operation need to be delivered in the context of wider changes to the roles and responsibilities of local authorities on net zero. The creation of a Local Net Zero Forum by BEIS, and the joint approach by Ofgem and BEIS in developing and implementing the Smart Systems and Flexibility plan, are both welcome routes to coordinating this work but we would welcome closer BEIS involvement in the ongoing engagement work associated with this call.

5. Do you agree with the opportunities of change we outline and the potential benefits they may create?

We agree with the opportunities for change identified in relation to clarifying accountabilities and maximising synergies. Greater consistency in approaches to energy system planning, both spatially and across national, regional and local scales, is essential. There is extensive evidence that local action on energy system change is currently hampered by a lack of clarity in the allocation of responsibilities between actors at different scales. This is particularly the case in relation to the allocation of roles and responsibilities between central government and local actors (including local authorities) as demonstrated in both our ongoing work in UKERC¹³ and by the EnergyRev consortium¹⁰. Electricity distribution is the location where many of these coordination and integration challenges come together and we agree that there is a pressing need to address these issues to deliver rapid and low cost decarbonisation.

More localised energy systems, focussed on dynamic balancing of supply and demand at the distribution level, are likely to play a central role in the future 'net zero' GB energy system. While there are some uncertainties over the costs and benefits of local energy institutions and governance; we argue that those uncertainties can be reduced by defined governance responsibilities at the sub-national level and

⁸ Cowell, R., & Webb, J. 2021. Making useful knowledge for heat decarbonisation: Lessons from local energy planning in the United Kingdom. *Energy Research & Social Science*, 75, 2214–6296. [Access here](#).

⁹ Cowell, R., & Webb, J. 2019. Local Area Energy Planning – A Scoping Study Final Report. [Access here](#).

¹⁰ Tingey, M., & Webb, J. 2020a. Net zero localities: ambition & value in UK local authority investment. *EnergyREV*. [Access here](#).

¹¹ Tingey, M., & Webb, J. 2020. Governance institutions and prospects for local energy innovation: laggards and leaders among UK local authorities. *Energy Policy*. [Access here](#).

¹² Kuzemko, C., & Britton, J. 2020. Policy, politics and materiality across scales: A framework for understanding local government sustainable energy capacity applied in England. *Energy Research and Social Science*. [Access here](#).

¹³ Webb, J., Tingey, M., & Hawkey, D. 2017. What We Know about Local Authority Engagement in UK Energy Systems: Ambitions, Activities, Business Structures & Ways Forward. [Access here](#). Our current research is also evidencing these points and will shortly be published. We would be happy to share the findings of this research with Ofgem in the coming months.

allocating resources to local governments to engage fully in local energy planning processes.

6. Are there additional opportunities for change and benefits that we have not set out?

The call could be more explicit on the potential co-benefits of clarifying local energy institutions and governance¹⁴. Clarifying the role of local authorities, DNOs, the ESO and other local actors is likely to facilitate visibility of the most cost-effective local routes to decarbonisation, however there are multiple non-climate benefits to accelerating electricity system decarbonisation, including across health, transport, housing inequality and jobs. In addition, it is important to note that local authorities play a particularly important role in realising many of these co-benefits, as well as the local democratic mandate to coordinate cross sector/vector action (see the evidence we cite in our response to Q4).

7. We set out a number of risks associated with change. Do you agree with these risks and the potential costs they create? Are there additional risks of change and costs that have not been set out?

The majority of risks suggested by the network operators in the call for input concern the separation of the DSO role from the DNO - and are understandable from the DNO perspective given that considerable resources have been allocated to the DSO transition to date. However the need for significant reform of market and governance arrangements is clear and we do not consider the fact that change can be disruptive and costly to be a rationale for inaction^{7,15}. The risks identified by the DNOs seemed to be concerned with clarity of function and duplication. We agree that there are key areas of risk but suggest that these risks can be mitigated through careful allocation and management of roles and responsibilities, as well as through as timely implementation schedule.

We agree that DNOs/DSOs have a potential conflict of interest in relation to managing market facilitation roles, network ownership roles and other business interests. It is not clear that the skills and competency risks of moving market operation functions away from DNOs outweigh these conflicts of interests, nor if the RIIO-ED2 Business Plan Guidance measures (executive-level accountability and board level visibility of DSO decisions, clear and separate decision-making frameworks between DSO and DNO parts of the business, as well as independent oversight of systems and processes) are sufficient to mitigate these risks. The risks section suggests that the capabilities to deliver all DSO functions already exist within DNOs, however research has increasingly indicated that there is a need for culture change in DNOs to enable them to re-orientate themselves to the full DSO role¹⁶. Additionally, some of the skills in relation to flexibility market facilitation are only just

¹⁴ Jennings, N., Fecht, D., & De Matteis, S. 2019. Co-benefits of climate change mitigation in the UK: What issues are the UK public concerned about and how can action on climate change help to address them? Grantham Institute. [Access here](#).

¹⁵ Lamb et al. 2020. Discourses of climate delay. Glob. Sustain. 3, 1–5. [Access here](#).

¹⁶ Mitchell, C. 2018. Name, Form and Function of Distribution Entities – clarity and agreement needed across the world. [Access here](#).

emerging and not yet fully established in DNOs.

The challenges of delivery have been documented as have recommendations to mitigate those risks¹⁷ and there will certainly be costs attached to changing the system but in this call there seems to be limited consideration of the risks associated with *not* delivering flexibility at the distributed level. As investments in distributed resources and new smart technologies develop, failure to take advantage of resulting flexibility will increase energy costs for those unable to invest in the new technologies¹⁸. If Ofgem's regulatory frameworks are to prepare the networks to deliver a net zero energy system in which 'no one is left behind'¹⁹, then the cost impacts of failing to secure demand-side flexibility services also need to be considered.

2.3 Framework model options for enduring arrangements

8. For each model, we have set out the key assumptions which need to be true for the model to offer the right solution. Which of these assumptions do you agree with?

While we agree that market operation and some planning can be separated from the DNO role, we suggest that system operation and real time and near-term planning can be kept as a DNO function. All DNOs have undertaken scenario modelling (although at different levels of complexity) based on the NG FES and have monitoring systems in place that allow the DNO to recognise system constraints, which could be indicated to a regional or central distribution market platform. Although, as mentioned above, there would need to be some change within the networks to encourage a 'flexibility first' culture, this can be achieved via code changes and regulatory incentives.

It is unclear why market operation needs to be linked to system operation, particularly at the distributed level. If the DNOs were to become full DSOs as defined in the call, having distribution markets at each of the DNO areas that cater for different geographies and, in some cases, for different devolved governments, complicates delivery of what could be a simple platform. Also, taking the system operation role away from the DNOs, when it is already embedded in their current duties, seems to be adding further complication. Therefore, we suggest separating system operation from market operation. We also suggest separation of areas of the planning function, with the system planner (either iDSO or regional planner) undertaking the longer term planning function (whole system, coordinating with the LAs, modelling via Distribution Future Energy Scenarios (DFES)) with the DNO, as it currently already does, undertaking short term planning to inform the DFES and its

¹⁷ For example, Bell, K., Gill, S., 2018. Delivering a highly distributed electricity system: Technical, regulatory and policy challenges. Energy Policy 113, 765–777. [Access here](#).

¹⁸ Costello, K.W., Hemphill, R.C., 2014. Electric Utilities' 'Death Spiral': Hyperbole or Reality? Electr. J. 27, 7–26. [Access here](#).

¹⁹ Ofgem, 2020. RIIO-2 Draft Determinations-Core Document. [Access here](#).

investment portfolio through its Business Plan, as well as its system operation and real-time monitoring role. However, unlike the status quo, should the planning be split in this manner the DNO Business Plan would be able to show where its short term investments fulfilled elements of the longer term plan (such as recommended for the water companies in PR24²⁰).

9. Out of the framework models we have developed which, if any, offer the most advantages compared to the status quo? If you believe there is another, better model please propose it.

We have made the assumption that there are three models plus a fourth model to suggest alternative arrangements.

Out of the first three models, we believe that the third model (Regional System Planner and Operator(s)), operating as a public body offers the most advantages to the future system. It may require legislation, and therefore take more time, but the regional, independent, whole system planning function will be vital for creating space for innovative solutions to decarbonisation. The regional model would also support tailored approaches in the devolved jurisdictions, recognising that Welsh and Scottish governments may choose to progress faster on some aspects of decarbonisation than England (certainly the case in Scotland²¹) and have flexibility to integrate slightly different approaches to local energy planning (LAEP and LHEES). The challenges of delivering Scottish and Welsh ambitions in the context of 'one size fits all' markets and regulation is a recurring theme in current UKERC research on Local and Regional Energy Systems. Locating this role at the regional level creates the opportunity for this planning to take place strategically, and an independent planning function creates credibility across system actors. The regional scale would operate on a geography where local authorities could meaningfully influence plans.

Our research indicates that some lack of network data visibility at the local level and a lack of coordinated energy system planning is a significant barrier to more integrated and ambitious action on energy system change (research publication due summer 22²²). However, we believe this model could be improved by allowing the DNO to keep its system operation role, as mentioned earlier, but with the distribution market operation sitting with either the regional system planner or Future System Operator. We suggest that there is considerable flexibility in determining where the 'market facilitation of flexible resources' function is best located. The important aspects of this role relate to information transparency and enabling clear interactions between actors. These functions could be delivered by a range of regional or national actors, however, we suggest that the DNO is not the most appropriate location for this function due to the potential conflicts of interest in delivering both asset based and flexibility based network solutions. As the call for input identifies

²⁰ See Ofwat. PR24 and beyond: Creating tomorrow, together. [Access here](#).

²¹ Kerr N. 2021. Heat decarbonisation in Scotland and the UK: ambition and divergence. [Access here](#).

²² These comments relate to current research on the institutional arrangements for local energy systems. We would be happy to meet to discuss the emerging findings of this research in more detail.

‘DNOs may have an inbuilt technical and risk bias towards asset solutions, resulting in underutilisation of flexible solutions’.

10. What do you consider to be the biggest implementation challenges we should focus on mitigating?

Time is a limiting factor to meet our decarbonisation targets, but this does not mean choosing the quickest framework to implement. Rather, it would be beneficial to make a firm decision as soon as possible on the most appropriate framework model; this will create greater certainty around how the future energy system will operate and when planned changes will occur. Ensuring that energy system actors know which framework has been chosen is critical to setting a timeline and associated milestones. This allows actors to eliminate some uncertainty around future system models and allow planning to occur. For example, for networks to integrate flexibility services, code changes may be needed along with new methods of regulation; the development of appropriate skills (and/or the transfer of staff and capabilities from existing DNOs) could represent a significant challenge if the regional system operator model is adopted; it is also necessary to understand how the model chosen may affect consumer protections. Additionally, it could take considerable time to develop a granular understanding of the code and licensing changes necessary to ensure that the agencies delivering each of the market functions are interacting as intended. However, the timescales of ED2 (2022-2028) leave significant scope to deliver these reforms before ED3, whichever model is chosen.

11. Taking into account the varying degrees of separation of DSO roles from DNOs under framework model 1, do you consider there are additional measures we should consider implementing, in particular in the short term (e.g. changes in accountability etc)?

This is an example of why certainty is needed on which model is to be progressed. It would allow some near-term planning, perhaps as part of the DSO reopeners, to ensure that current actors can begin to establish changes to their current roles in line with the chosen future governance arrangements.

12. Are there other key changes taking place in the energy sector which we have not identified and should take account of?

There are multiple, interlinked reforms taking place within the GB energy sector currently and it is important that any changes to local energy institutions and governance clearly set out how they interact with these other reforms (such as the development of the FSO, the ongoing Review of Electricity Market Arrangements, reforms to network charging, locational pricing arrangements). The emerging market facilitation role should also be integrated with any changes to the supplier hub model, ensuring that flexibility services are open to a wide range of consumers and third parties.

2.4 Next steps

13. What do you consider to be the most important interactions which should drive our project timelines?

The development of the FSO is a key interaction with any reforms and the proposal to have the FSO operational in 2024 provides an achievable timescale for integration. There is likely to be considerable learning from this process that will be able to inform distribution level implementation. Equally, the model chosen will impact on the baseline expectations and incentives for RII03. Therefore, the commencement of ED3 in 2028 provides a clear end date for reforms to be implemented with the opportunity to utilise DSO and Net Zero reopeners to address issues within the next five years.

We would also add that proactive engagement from Ofgem that goes beyond the networks and usual suspects, and especially welcomes the 'new voices' anticipated in the future local energy system, would ensure that proceedings have broad participation and are customer and future focussed.