
Response to Ofgem's "Call for Input: Future of local energy institutions and governance"

About BUUK

BUUK Infrastructure is the leading independent provider of last mile networks, constructing and operating essential utility assets in Great Britain. We own and operate electricity independent distribution networks (IDNO), independent gas networks (IGT), as well as heat, water and telecoms networks.

We are already in conversations with new property developers regarding net zero energy solutions for their energy and utility needs. Providing advice and information as to the different options that are available to them, the relevant costs for different infrastructure and offering a single service for build and adoption. We can therefore attest to the benefits that a joined-up approach across energy vectors and utilities can provide to customers.

Overview

We support the key proposal that the transition to a net zero energy economy requires the establishment of new roles in the market. The two described here, a more locally focused System Operator and a Regional Energy Planner, are part of the future requirements. There are others, particularly in the space of consumer engagement and education about the transition, that also need to be explored.

As a builder of multi-utility services and an energy solution provider we have experience of working with building developers to provide optimal solutions. The choice between delivering heat networks, individual electrical heat pump solutions or gas solutions is something that we deliver today for customers. If greater clarity and certainty could be provided from a regional energy planning role this would help reduce the risk to new investments that we make and ultimately lower the costs for all consumers.

The new roles that are needed are likely to evolve and adapt over time. The models described in the Call for Evidence are likely therefore to be stages in a gradual evolution.

Our key comments on the proposals are as follows:

Resources

It was correct to highlight that resources will be a key issue for these new institutions and will be critical to how successful they will eventually be. This should be recognised in the design from the outset.

For example, future System Operation, operating at real time simultaneously at a local and national level, will need coordinated and connected delivery systems to work optimally. Without these solutions will be costly and not deliver the full potential value to consumers.

Regional energy planning needs a good understanding of multiple energy vectors and their costs, expecting this from a fragmented local Government is unlikely to be achievable or efficient.

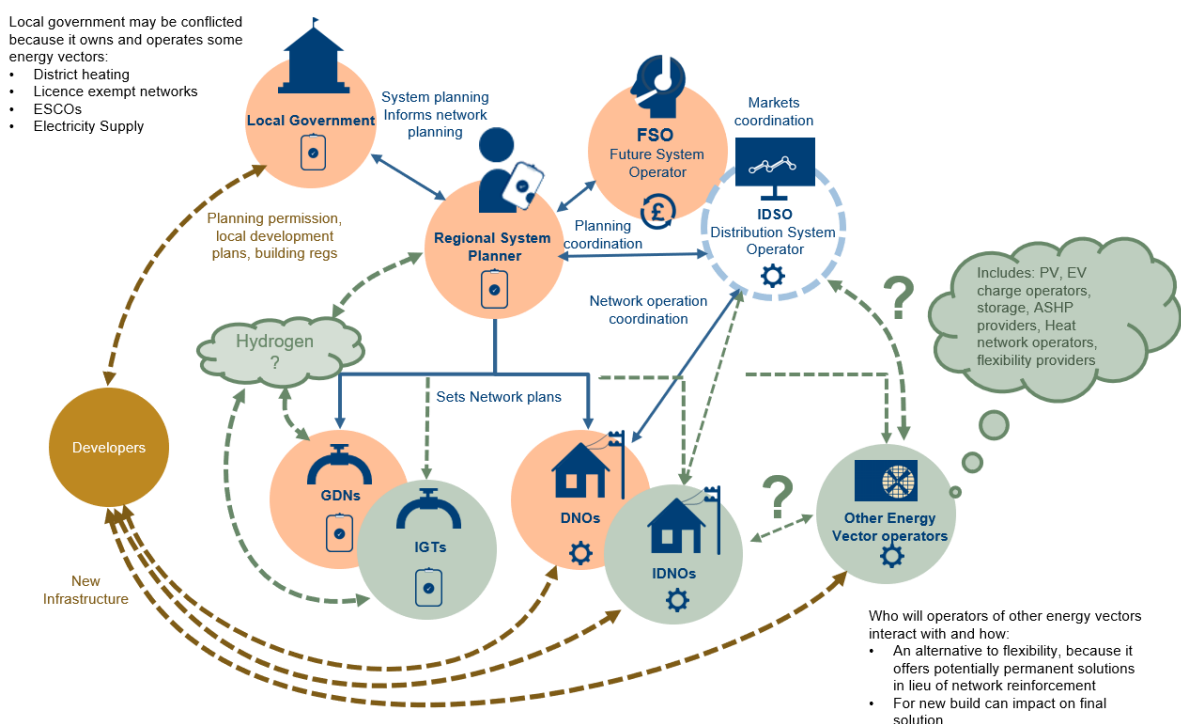
Independence and competition

System Operation and regional energy planning needs to be independent of vested commercial interests, and competition should be encouraged and used whenever possible to deliver optimal outcomes. This was recognised by Government with the establishment of the Future System Operator (FSO) and the same principle applies to distribution level System Operation.

Gas Transition and the role of independent networks

The Call for Input focuses upon the electricity sector, but the decarbonisation of building heating will require a significant co-ordination effort with the gas networks, as these transition away from natural gas.

The models described in the Call for Input are useful in bringing clarity to the future interactions between parties and to describe roles and responsibilities. However, they excluded the role that independent networks and developers currently have in the market (particularly new build) and how these will be affected. We have developed the Model 4 to explain how the interactions will need to include all actors.



Appendix - Response to Questions

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 think the three functions identified form a sound basis for initiating a review of the changes required to the energy system. However, the review should be open to incorporate additional functions identified as work and thinking evolves.

Whilst Ofgem gives a high-level definition of its understanding of these functions, we think these need to include:

- The scope of activities undertaken under each function and the expected inputs and outputs.
- The boundaries of each of the functions and how they interrelate with each other, and with other activities associated with the energy system.
- How the inputs and outputs from each of the functions are communicated between different actors.

We think that work is essential in developing a framework model that is best suited to delivering Ofgem's ambitions as set out in the Call for Input document.

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 identified. In addition, we think three additional criteria to consider are: **Effectiveness, Economy and, Efficiency**:

Effectiveness: Linked to credibility but different. It is important to assess how effective existing and revised institutional and governance arrangements are at delivering the defined objectives. Such assessment needs to consider effectiveness of individual institutions and the effectiveness of the broader energy system framework.

Economy: There needs to be a test to show that institutional and governance arrangements are cost effective at delivering the functions and defined objectives. It would seem inappropriate to put a new framework model in place without a mechanism to measure its effectiveness.

Efficiency: How efficient is the framework model and the different actors and roles at delivering functions. This measure considers cost effectiveness, timeliness as a whole.

In setting criteria, it is essential to have a clear view on how performance against each criterion will be measured, i.e. what benchmarks will be used to measure and define success. For example, what does competence mean? Whilst GDNs and DNOs may be judged as competent in their current roles, it does not follow that they will be competent in undertaking the prescribed functions and roles in a new framework model.

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?

At the headline level, we agree with Ofgem's assessment that current institutional and governance arrangements present challenges around how the identified three energy system functions will deliver the transition to net zero. However, we think further work is required to be more specific about how the current arrangements inhibit delivery and quantify the impact. It is essential to have a clear understanding of the failings of the current frameworks in order to provide a counterfactual "do nothing" benchmark against which alternative arrangements can be assessed. For example, in respect of energy system planning, Ofgem identify:

- *"...That current institutional and governance arrangements present challenges to achieving effective system planning..."*
- resource constraints and skills gap make it challenging for local government institutions to carry out energy planning.
- DNOs have an inbuilt bias to asset solutions.
- Local actors have different mandates and priorities, whereas different local government institutions will consider the needs and opportunities in their area and plan accordingly.

It is not clear, how alternative framework models with new or redefined institutions will address issues such as the skills gap and inbuilt biases of different institutions and actors which, be they a public body, a not-for-profit organisation, or a private business, will align their positions to their specific different mandates and priorities. Such priorities will be set for different actors in designing and assessing any framework model:

- Local government priorities will be driven by different statutory obligations which will be much broader than just delivering net zero.
- The priorities of electricity distributors, gas transporters and other energy vector providers will be coloured by the statutory, regulatory frameworks that apply to them, as well as by the priorities of their stakeholders.
- Changing the remit or name of a body does not in itself address the institutional biases (and priorities) that have evolved over a long time.

Notwithstanding the above, the current arrangements are not designed to coordinate the different energy vectors in the transition to net zero. Although gas and electricity (and soon heat) vectors are regulated by the same regulatory body, in practice they operate in their own silos which, in turn, are shaped by different statutory and regulatory provisions. The same is true for the institutional and governance arrangements for each of the vectors.

Therefore, to establish arrangements that are optimal in delivering the three energy functions across energy systems (electricity, gas, heat), we think changes to primary legislation are

required. It is not clear how Ofgem's review will better coordinate energy vectors that are outside their remit (transport for example).

In owning and operating IGT and IDNO businesses we are very much aware of the biases that play across incumbents and that decisions and solutions imposed by incumbents will often be skewed (unintentionally or otherwise) in favour of their own businesses, with little consideration on the impacts on our network businesses. Therefore, we think current arrangements need to evolve where the three energy functions identified are independent.

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

We think there are three key blockers to the realisation of effective system planning.

The first is a lack of clear coordinated common objectives from different actors across the various energy vectors. Most, if not all, actors understand the vision is to get to net zero. However, the mechanisms of how to get there (and how they will be financed) are either not clear or not in place. This inhibits local decision making and the development of organisational frameworks that will be required at the local level to facilitate the net zero transition.

The second is the potential skills/resource gap. It is not just about having the right resource/skills in the right place. It is about developing the right skills/resources across the whole energy system platform.

The third blocker is the availability of appropriate quality information required to undertake the three functions in a network world. Whilst digitalisation will play a key part in this, it is also about:

- developing a strategic information framework to understand what decisions need to be made by who (and when);
- understanding what data is required to support and inform such decision making; and how such data/information will be provided and maintained (data architectures, systems, data exchange mechanisms).

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

We agree the review provides an opportunity to consider industry framework changes that will be required to realise the synergies across different energy vectors and different functions. Whilst the transition to net zero will be revolutionary, how the industry gets there is likely to be through a series of evolutionary changes. Therefore, it is important to set a framework that clearly sets a directional path, and which does not inhibit the evolution of solutions which are either unavailable or unknown at this time.

In realising synergies, it is important to consider the role of all actors, and not just those responsible for managing the three functions. This transition to net zero offers the opportunity to reshape the energy industry to deliver at least cost.

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

Ofgem sets out that in looking at the energy system at a subnational level, the electricity distribution system is a key starting point. Additionally, Ofgem also need to consider changes required to other energy systems.

Ofgem's Call for Input is heavily biased to the future electricity system and does not fully consider what arrangements might be best suited to coordinate functions across all energy vectors. We think it is important to do so since arrangements put in place as a consequence of this review are likely to stay in place for a large part of the transitional journey to net zero. Therefore, in developing framework models, further consideration is required on how other energy vectors, such as gas (methane and hydrogen) and heat, will be incorporated as part of that journey.

In considering the activity of Distribution System Operation (currently undertaken by each distributor), it is important to be clear on how this will be done going forward and by who; and on where the boundaries between DNO and DSO activities should be drawn.

We think such arrangement should be regionally based and should incorporate the activities of DNOs, IDNOs and potentially licence exempt networks – as opposed to being undertaken by each licensee in respect of their own networks. For this to happen we think such activity must be independent of DNOs.

It is also important to define and review the boundaries between activities undertaken by the ESO/FSO and the activities undertaken by new roles for local network planning and operation.

There is an assumption that the regional System Operation activity should be undertaken at the level of the existing DNO. In a future scenario where the electricity wholesale market has been made more localised and nodal it might be more logical for regional system operation to be aligned. This may present greater opportunity for flexibility value to be stacked and be attractive to consumers.

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 potential costs and risks will depend on which solution Ofgem selects. In determining any change it is important to consider how such change will dovetail with changes brought about by other reviews, e.g. REMA. We think there is a significant risk that the outputs from different reviews may conflict with each other (or be duplicated).

Clearly one of the biggest risks will be a failure to identify and quantify clearly what this review is expected to deliver. The value of effective criteria to measure success will be compromised if the benefits that review is expected to deliver and it is expected to address are poorly defined and quantified. It is then essential to identify the risk (and "cost") of failing to deliver the changes and potential actions/ solutions to mitigate them.

We agree that there is a risk that developing some of the more ambitious framework models will take significant time and resource. However, whilst implementing some of the simpler models (Model 1 and Model 2 for example) may be less resource intensive, this needs to be measured against whether the change will address the identified challenges.

We note the risks reported to Ofgem by DNOs in response to Ofgem's previous RFI. Whilst we recognise synergies in providing the DSO and DNO activities as an integrated operation, and that additional costs may be associated with separating out the functions, we think retaining DSO role within DNO ownership and control creates its own risks. These include DNOs distorting the operation and provision of the three functions; in respect of the management of connecting IDNO, or licence exempt network, and in the provision of market-based flexibility solutions. We do not think that such risks can simply be addressed through ring fencing provisions in licences.

We are concerned that maintaining a Model 1 framework would inhibit the development of integrated energy system operation across different energy vectors and would result in a strategic focus on protecting the position of the DNO system. We think this would still be the case where the DSO role was separated out into functions with 'Chinese walls' between them. Our experience is that such separations do not work as well in practice as theory might suggest.

There are different risks associated with solutions for each of the three functions identified. We think different solutions may be appropriate for each of the identified functions. We are not convinced that DNOs (or any one body) has the appropriate competencies to fill all three functions, and that there is a significant risk of failure to resolve the identified challenges if this were the case.

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?

Our assessment of the models is a high-level assessment only. We think there is a lack of detail to enable us to give a detailed assessment of the assumptions and on what other assumptions may need to be considered:

Model 1:

- It is not clear what the assumption is in respect of the IDNO interface: Are IDNOs (and licence exempt networks) required to establish their own DSO function? or is it assumed that the DNO would provide the DSO function for the relevant Distribution Services Area?
- The 'conflicts' assumption refers to managing conflict of interest between DNO and DSO functions. There are no assumptions about how conflict is managed between the DNO/DSO and other stakeholders (e.g. FSO, flexibility providers, IDNOs).

Model 2:

- In model 2 the implicit assumption is that the DSO role needs to be undertaken “locally” as a distinct and separate activity, i.e. it cannot be undertaken as an activity or sub activity of the FSO or some other existing body (other than the DNO).
- The assumption is that there would be a single, independent DSO, for all licensed network operators (i.e. IDNOs and DNOs) within a region

Model 3:

- The assumption is that flexibility markets are coordinated at a regional level and that flexibility would be across gas, electricity, and heat vectors (as a minimum).

Model 4:

- The assumption here is that the three functions are not inextricably linked and are carried out by different parties.
- It also carries across from other options that the assumption is that a body (separate from the DNO) undertakes certain DSO roles.

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 do not support Framework Model 1. We think it is impractical, inefficient (and potentially unworkable) for each licensed distributor (IDNOs and DNOs) to provide their own separate DSO role and then coordinate with other DSOs operating in a region. We think there should be a single DSO role for each region. However, we think that this should not reside with the DNO, given that IDNOs compete with DNO businesses to provide network solutions in the provision of networks, and potentially in facilitating flexibility solutions as part of the transition to net zero.

We think the weakness of Model 2 is that it focusses on electricity. It does not include the vectors of gas, heat and potentially hydrogen - which is outside the scope of current licensing regime. Also, we do not think that the required competency for each of the three functions identified by Ofgem is necessarily the same. However, we think Framework Model 2 could offer a transitional step towards more holistic arrangements under Framework Model 4.

We agree that Framework Model 3 is likely to be the most challenging to implement. Given the significant lack of detail on the different roles, it is difficult to identify with any certainty what specific advantages Model 3 would deliver.

More detail is required about what the arrangements under Framework Model 4 would look like and how they would work before we have any confidence in what advantages (or otherwise) would deliver. Nonetheless, we think one of the key advantages of a Framework Model 4 arrangement is that it may be better able to encompass all energy vectors going forward.

Also, we think the requirements for today may be different to those in five years, which, in turn, may be different to those in 10 years. We think the models presented offer the potential transitional route. For example, from Model 1 (which is likely to be the start point for RIIO ED2), through to Model 2 and then through to a Model 2+ arrangement with some functions carved out (i.e. a variant of Model 4?). This gives the flexibility to adapt as our understanding of the net zero world becomes clearer. It also breaks work down into manageable steps and learn from experience on the journey. We believe it would be helpful for Ofgem to lay out its expectations on these transitional changes and associated timescales in its formal consultation.

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

Putting arrangements in place that deliver net zero, at an efficient cost to consumers is the real prize to be gained. We think the biggest challenges that need mitigations are in respect of ensuring the appropriate resources are available from different stakeholders to undertake the work; that delivery options may be unduly skewed to reflect the ambitions of some key stakeholders; or, that the scope of work may drift resulting in delays and diluted ambitions, .

Also, there is a significant challenge in respect of coordinating the various initiatives and reforms being undertaken across different Government/Ofgem silos to ensure that they (a) their objectives and solutions do not conflict or create gaps; and that relevant stakeholders have sufficient resource capacity to cover all the bases such initiatives include the Review of Electricity Market Arrangements, the review and consolidation of industry codes, network charging reform, the establishment of the FSO, the introduction of heat network zoning and consideration of the role that hydrogen will play in the future energy mix.

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 would consider implementing, in particular in the short term (e.g. changes in accountability etc)?

We have identified the risks of market distortion to IDNOs where the role of DSO is not separate from that of the DNO. Therefore, should Ofgem choose to pursue the Model 1 route we urge that the measures put in place must be robust. This could include independent annual audit mechanisms where findings are transparent and public, requirement on DNOs to set up an independent appeal mechanism to which parties can refer disputes.

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

We are not sure that the proposed models offer frameworks for parties to successfully compete for the provision of future solutions. Competition in the delivery of solutions should be a key part of the model for the delivery of energy solutions.

The digitised future of energy solutions is driving new requirements, and these will influence the eventual governance and institutions needed.

Defining the role that the FSO will play will influence the eventual outcome and a great opportunity. If established with a sufficient remit it can potentially play a broad role in helping, via digitisation and data management, the delivery of smart networks and the encouragement of domestic flexibility.

For example, knowing where low carbon technology assets (EV chargers, ASHP, PV and batteries) are located on the network is going to be vital in providing future system operation. BEIS Net Zero Innovation Portfolio funding is pioneering the development of automatic asset registration services which rely on the need for a central data service provider.

The FSO would seem to be a logical provider of this service in the future. It would be well placed to drive the required standards (e.g. BSI PAS 1878 will need further development to meet the aspirations of a central asset register) and to contract with relevant service providers that will be needed in the future.

Next Steps

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

One of the most important future interactions will be understanding the future role of hydrogen and how the transition of methane gas will be managed as the UK transitions to net zero. A further important future interaction will be with heat networks as the development of the heat networks market framework is better understood.

These will play pivotal roles in understanding the net zero landscape and what roles organisation/institutions within the energy industry need to play.

Any decommissioning of gas as the primary source of providing heat to homes or the development of new heat sources will significantly impact on the role that electricity is likely to play in providing energy in a local area. This needs to be undertaken in a co-ordinated manner.