



3rd Floor North
200 Aldersgate Street
London EC1A 4HD
Tel: 03000 231 231

citizensadvice.org.uk

28 September 2021

Citizens Advice response to 'Energy Future System Operator Consultation'

Dear FSO Team,

Thank you for the opportunity to respond. This submission is not confidential and may be published on your website.

Citizens Advice supports the development of the Future System Operator (FSO) as proposed in the consultation. We recommend the FSO needs:

- to understand and anticipate the needs of end consumers, achieved through working collaboratively with stakeholders;
- to have functions that support innovation and consumer advice, in addition to network planning and investment;
- to monitor and innovate market design and competition; and
- to have strong accountability to stakeholders, as well as the regulator and governments.

In addition, due to the urgency of the situation we also recommend the immediate development of an BEIS led steering group that would:

- assess the requirements, harness the opportunities and consider the risks of a system architect/central planner role;
- align current reforms where possible and shape the format of a common energy scenario or options assessment that will be used to better coordinate energy network development.

Introduction

We support the immediate development of an FSO as an opportunity to improve energy system operation, provide more coordinated and transparent strategic planning and to better inform decision making of the FSO's wide range of stakeholders. We also support the implementation approach of developing and better integrating the system operator roles for electricity and gas networks.

We think decarbonisation and more grid edge activity (demand response, generation or storage) means that the FSO requires expertise and structures to incorporate consumer views and representation of consumer interests. This role, we believe, can play a vital role in supporting an equitable distribution of impacts arising from the energy transition.

Citizens Advice, as the statutory energy consumer advocate, is well placed to support this role. Citizens Advice already works productively with National Grid as the electricity and gas system operator to represent the interests and preferences of consumers based on our research and insight. This includes: seconding members of staff from the Electricity System Operator (ESO), sitting on the ESO Performance Advisory Board, feeding into the Future Energy Scenarios, contributing to and chairing consumer engagement groups, sitting on code governance panels and influencing formal and informal consultations. This engagement is part of our advocacy work as statutory advocate for energy which helps inform the advice we are able to offer energy consumers through our network of local offices, Extra Help Unit (EHU) and national consumer service. The advice needs of consumers is changing as a coordinated national approach to decarbonisation develops and Citizens Advice are working to meet the evolving needs.

Understanding and anticipating the needs of consumers

The FSO should enable network and system recommendations, decisions and investments that better support the urgency of climate change mitigation. To be effective the FSO structure needs to support the evaluation and communication of the system options that will effectively balance the objectives of minimising consumer costs, lowering carbon emissions, improving energy service options and developing consumer engagement with net zero. For the FSO to balance these objectives this will require accurate and up to date insight into consumer preferences and habits to inform planning, energy market development and governance. A central planner/system architect role for the FSO will be well positioned to support this highly collaborative stakeholder activity to draw together expertise to better understand how consumers are using the energy system and are likely to use it in future.

To meet the rapidly evolving system requirements and the increasingly complex needs of energy system users to support net zero, the FSO should coordinate planning and delivery of energy system operation and governance, which requires additional FSO functions in stakeholder engagement and coordinating consumer representation.

Supporting innovation and consumer advice

We support the FSO taking all functions of the ESO and we accept the impact assessment case for the proposal for integration of some gas operator roles into the FSO. To deliver against the case for change there are numerous new roles that appear to

be required of the FSO. These, in our view, include supporting innovation and consumer advice.

The RIIO process, including innovation funding, and the fragmented consumer energy advice provision in Great Britain need to be informed by the FSO to be consistent with the expectation of a net zero energy system.

FSO should be encouraged to innovate, and to promote innovation within the networks. Innovative and groundbreaking technologies and approaches are required to deliver net zero, and the FSO should also be incentivised to achieve this and to further encourage it in the network.

Whilst the FSO will have an advisory duty to government and energy sector organisations, it is not within scope - or feasible - for the FSO to play a role in individual-level consumer advice. Citizens Advice is well positioned to centrally coordinate consumer advice.

The FSO could inform advice organisations of potential paths, technologies and approaches that are likely to impact customers so that we can provide consumers with relevant and timely advice. The FSO will be best placed to provide this overarching direction to consumer advice organisations by drawing on its holistic view of the system, and advice providers are likely to be best placed to interpret this and deliver it to consumers.

Broad scope to influence market design and competition

The energy markets that have developed in capacity, wholesale, balancing and retail are not structured to create price signals that lead to a consistent and efficient approach to incentivisation and cost reflectivity. The FSO should be on the front foot in promoting market design developments that enable the incentivisation of efficient system solutions that can allow services that offer value to consumers.

Strong accountability to stakeholders

We think accountability to stakeholders and consumers via engagement groups and/or performance panels can have a powerful role, as is currently the case with the ESO stakeholder group, the ERSG.

Immediate development of an interim BEIS led steering group

Currently, BEIS and Ofgem are working through numerous reforms to try and facilitate the scale and pace of change necessary to reach net zero targets. We entirely support these efforts and have provided a consumer voice in many of these processes, however, we are concerned that as they are being run separately they will not deliver the pace of change or capture opportunities for consolidation in network, systems and code

development, or deliver the prompt realisation of an enduring and accountable governance.

We would advise the immediate development of an interim BEIS led steering group that will assess the requirements, harness the opportunities and consider the risks of a system architect/central planner role. We would expect this to be a steering group involving Ofgem, ESO and GSO that looks to align where possible the numerous processes of concurrent reform. This should transition into the basis for a central planner/system architect function within the FSO.

Our Responses to the Consultation Questions

Questions on the Case for Change

1. Do you agree that net zero will create the need for new technical roles in the electricity and gas systems, and require a new approach to energy system governance?

Domestic and microbusiness consumers' needs from energy system connections are changing. They will increasingly include local generation, storage (via batteries), decarbonised heat, transport (via electric vehicle charging at home and on the move) while many require more power due to working from home. Also, there is also a trend for consumers with complex needs to increasingly be supported in welcome independence through digitally enabled remote services including education and care which rely on secure internet and electricity. These trends are likely to impact consumers' future needs of the energy network.

Alongside meeting consumers' direct energy system needs, system operation and network planning also needs to evolve to modernise and decarbonise. The energy system needs to support the development of networks that will cope with decarbonised generation, significant offshoring of generation, increased embedded generation, and more storage to manage intermittency. Some of the major challenges include: reflecting a more detailed understanding of current and modelled energy demand, particularly on the low voltage network, standardising the development of distribution system operations, increasing the digitalisation of system assets and better automating data sharing.

There will be interdependencies between both consumer demand development and the improved operation of the energy system. Consumer engagement with system flexibility can lead to significant carbon and cost savings, as shown by the FES2021 'Leading the

way' scenario¹ and by studies that show the value of energy system flexibility². Consumers preferences, behaviours and adaptations will therefore shape the efficient route to whole system development and therefore need to be key to FSO network planning.

Distribution of impacts of energy system development

We think that energy system development will benefit from a consistent governance approach to understanding energy consumer preferences and their anticipated energy behaviours because these characteristics will determine the value the energy system provides to the end consumers.

Currently, the way in which multiple forms of consumer archetypes and segments are used across energy networks and systems business planning, codes and governance is inconsistent. This leads to challenges in creating impact assessments and weak consistency and comparability in models of development across the energy sector. The development of commonly used archetypes would be a key tool to support the efficacy of assessing the impact of initiatives to address net zero, fuel poverty and other consumer outcomes from the energy system. There may be a need to create different archetypes for different network impacts, such as consumers' energy load requirements, consumers' ability to flex their demand and for consumers with additional challenges in engaging with their energy.

By establishing consistent archetypes that are used in the network business planning, code development and innovation programmes, it will provide greater visibility of the distribution of impact of energy system development.

For those consumers that are not effectively reflected in the imperfect process of segmentation, it is for consumer advocates, such as Citizens Advice and others, to model underrepresented interests and needs. However, even this critical process will benefit from having a common language and evidence that can be used to reflect the distribution of impacts of the energy system development.

Research and innovation

The development of the Strategic Investment Fund (SIF) to support the delivery of energy innovation that will benefit consumers should use agreed archetypes in deciding and evaluating proposals. There is also a need to have a 'barometer' on consumer attitudes towards current and projected energy use and behaviours, as well as in-depth research into consumer attitudes towards the way in which the energy system might develop. This research will likely be highly collaborative to get the best real world evidence to best understand and anticipate consumer behaviour.

¹ ESO (2021) [Future Energy Scenarios](#)

² Carbon Trust (2021) [Flexibility in Great Britain](#)

We also think that FSO decisions also need to inform a feedback loop of advice to consumers to support consumer awareness and understanding of how they can adapt to energy system development. As increasingly active participants of the energy system, consumers and their intermediaries and advisors will need to invest, plan and evaluate a property's energy choices just like commercial customers and the energy industry. To do so will require an accessible representation of system planning for consumers that helps explain consumer options. Energy intermediaries and service providers will clearly have an important role in interpreting this direction and presenting information to the consumer. There, however, needs to be consistent direction on how consumers' energy supply situation relates to low carbon technology options, as well as potentially detailed information for consumers in geographies that are significantly impacted by the location and capacity of generation and the role of balancing solutions.

2. Do you agree that the establishment of a Future System Operator is needed to fulfil the kinds of technical roles needed to drive net zero?

We agree that there are new technical roles required in the electricity and gas systems, and that governance needs to be improved to support the transition to net zero. It is important that the FSO is technically expert and is able to develop an in-depth understanding of the new and evolving technologies in the electricity and gas systems.

The consultation suggests that the FSO will be *“accountable to consumers and able to support the delivery of net zero on behalf of the public”* through the FSO's relationship to the regulator and via a statutory function overseen by parliament. This on its own will not create an accountable organisation. In section 4.3.5, it is proposed that for *“more active users of the system it will be important to ensure there is effective communication between the FSO and its end customers and that due consideration is given to any impacts on vulnerable consumers”*. This is likely to be via organisations with a direct relationship with the consumer who will provide an important view on the efficacy of the FSO's service.

We think that the FSO model can support the technical ability of evaluating whole system impacts of changes to system operation and network development. However, the FSO remit should be defined in relation to the consumer outcomes it supports and it should be held to account by both government and stakeholders on its outputs. Without having a technical function linked to working with a user and consumer representative group, and without consumers directly informing FSO decisions, the FSO will not have a trusted whole system view and its decisions will have weaker accountability and independence.

We think that net zero policy requires a clear longer term strategy for system and network planning to provide industry, investor, and consumer confidence that changes to system operation, market design and network planning are being delivered efficiently. This requires an FSO capability to create expert whole system benefit analysis that can inform impact assessments and therefore enhance the capability of networks and markets to deliver new services.

Currently, the Future Energy Scenarios (FES) produced by the ESO offers multiple ways in which the energy system could develop subject to the policy and regulatory decisions that will determine the drivers on system operational characteristics and requirements. This provides a degree of industry confidence in the assumptions behind system operation. It is also a clear signal upwards to the regulator and government about the perceived changes necessary to deliver net zero.

An FSO with greater responsibility for coordinating a long term view and strategy should provide greater confidence to stakeholders about the anticipated future energy system characteristics. This means that the policy and regulatory outcomes required as understood from industry, stakeholder and consumer are presented transparently as dependencies of a central FSO options assessment, model or plan.

A key element of long term energy system strategy and market signals is the FSO being transparent about how it analyses network requirements from consumer and user preferences, needs and behaviours and is therefore accountable for its decisions, recommendations and advice. The transparency of these assessments will also support independence from the government.

Consumers will have an integral role in developing system requirements through their consumption habits, generation and flexibility - for the FSO to unlock the potential of system design they need to be regularly listening to consumers and modelling outcomes that provide evidence for their decisions.

Transparency of the FSO outputs with formal challenges from user and consumer representatives, such as a consumer engagement group, will support clarity over perceived accountability and meaningful independence from policymaking.

3. Do you agree that a Future System Operator should have roles in both the electricity and gas systems?

We agree. Strategic system planning should be enhanced by expertise in system operation for gas and electricity. It should support a more coordinated approach to oversight and planning of electricity and gas systems.

4. Do you agree that a Future System Operator should be entirely separate from National Grid plc?

We agree. The FSO should be unequivocally focused on public interests. If the FSO is a private company it will add significant complexity in creating incentives to support the delivery of the public service functions outlined in the consultation proposal and this response.

5. What issues are there with existing institutional arrangements in the UK energy system in relation to system-wide decision-making and planning?

Separations in strategic planning between electricity, gas, distribution, transmission, onshore and offshore and in legacy energy code arrangements create issues with making strategic decisions that reflect whole system value for consumers in a timely manner to support the net zero commitment.

Currently, BEIS and Ofgem are working through numerous reforms to try and facilitate the scale and pace of change necessary to reach net zero targets. There are a number of consultations and workstreams, such as on offshore coordination, onshore coordination, early competition, competition in connection, and code reform. Each of these pieces of work is separately looking to encourage a more coordinated plan of development in the energy system that will minimise cost and disruption through the transition to net zero. We entirely support these efforts and have provided a consumer voice in each of these processes. However, we have concerns that, as they are being run separately, they will not deliver the pace of change or capture opportunities for consolidation in network and systems development. This does not provide an enduring and accountable governance process.

Much of the expertise that is required to effectively coordinate large scale network development currently relies heavily on incumbent network companies' expertise and capabilities. In the short term it is vital to prioritise utilising network company and stakeholder expertise, and capabilities, to understand opportunities for coordination and to efficiently deliver solutions. For example, it is highly practical that offshore coordination transmission operation groups are being formed to advise on the feasibility of coordination plans and support the speed of code development. However, the pace of delivery required and the lack of established accountability and governance checks means there are increased risks to consumers in ad hoc, industry led approaches to identifying opportunities for coordinated change.

There is currently not an agreed common approach to understanding consumers current and evolving energy system needs that are used in network planning or in energy codes and governance. This cannot then feed into a holistic central network plan or agreed future energy scenario with a clear and transparent governance process.

Without a strategic view and central design to evaluate network and system options informed by agreed current and anticipated future consumer needs, it will reduce the comparability and efficiency of system cost and benefit assessments. This makes it difficult to create an accountable and broadly applicable process of anticipatory investment, based on the future contribution of assets to energy system development and the realisation of consumer value.

6. What examples/case studies are you aware of where net zero delivery in one part of the energy system did not adequately account for cross-system impacts or costs?

There are numerous ways in which existing institutional arrangements do not support system-wide decision-making and planning. We have outlined a number of examples:

Overall consumer value from energy network and system investments

There is not currently a methodology to consider the broad cross-sector social return on investment (SROI) to be quantified to assess the merits of one energy network investment relative to another investment. The way in which consumers are dependent on energy networks, specifically electricity (such as heat, mobility and remotely providing support services) are becoming more complex. This means that it will be increasingly problematic to evaluate the cost and likely benefits of network investment, and network failures and outages, in a way that reflects cross-system impacts.

The responsibility of coming up with a credible and reliable metric for assessment should not be left to electricity distribution companies. In our view, the Ofgem working group efforts and business plan drafts have not progressed the social return on investment (SROI) model efficiently. Given the difficulty of developing this approach and assessing consumer benefit there is also likely to be significant information asymmetry between networks and Ofgem. A key role of the FSO should be to develop expertise in network planning and assessments to enable a means of assessing costs and impact reporting.

Issues relating to energy system efficiency and decarbonisation, including data standards, engineering standards and restoration standards should be approached as facilitating or delivering energy service value to consumers to support the consistent evaluation of system decisions.

Anticipatory investment

There is not a coordinated long term strategy and modelling for the energy system development that has the required confidence to effectively provide a consistent basis for a view of where anticipatory investments represent good value and where they do not. This requires an overall options assessment or plan and standardised assessment of whole system benefit on issues such as demand protections, technology projections and delivery confidence that will make up the dynamics of system design/architecture.

Central system and code development

There is no coordinated strategic direction to deliver code change that will facilitate the range of change needed to deliver net zero.

We agree with the Codes consultation proposition that Ofgem becomes the strategic body. However, a key function of the FSO will be shaping the strategic direction options for Ofgem that will be consulted on in the production of its approach.

The operations expertise within systems operation should support the planning expertise that provides a strategic view. The options assessment or central planning

scenario used by the FSO alongside the strategic direction will need to dovetail to provide a consistent view of short term and longer term change.

Consumer journey

It is not clearly set out who is best positioned in the energy system to provide necessary services to support consumers' transition to net zero. This means there is currently not a clear consumer journey map and there are poorly aligned incentives to deliver demand response. This situation will benefit from a robust independent assessment of how well positioned existing organisations are to provide future services.

In ED2, network companies are tasked to seek to undertake consumer facing activity where they are best positioned to do so. Going forward we hope to see a more evidence based approach to consider how services can be provided. We think there needs to be a robust independent assessment of the advantages a network company may have in the provision of services, particularly where they impinge on market development. There is also an increasing need to ensure electricity and gas network services are dovetailed to better support consumers transition to low carbon energy alternatives.

We think a critical part of the suggested FSO role for market development is establishing the costs and benefits of network-led activity, versus different forms of market incentives or a national consumer engagement programme.

A joined up approach to data architecture

Energy networks have a privileged position of managing consumer and system data. A public FSO body should support the development of a clear strategy for how system and consumer data should be presented in a comprehensive, accessible, usable and fair manner. The Energy Data Taskforce and Ofgem have improved the requirements on networks to provide open by default and better principles of data sharing. However, there is currently no coordination in data sharing strategy across central systems which means there is a significant lack of clarity about how consumer and system data will be most efficiently and effectively made available³. For example, various settlement and smart systems each have data access routes for third parties, while the Energy Networks Association (ENA) are also looking at sharing options. The criticisms of the UK approach to data access⁴ encourage a clearer view of what data and data access is needed to deliver the services that are needed to achieve net zero. The engineering standards review recommendations make clear the steps required impact collection, formatting, storage and distribution of data.

Local planning

³ Citizens Advice (2021) [Response to Ofgem's Consultation on Data Best Practice guidance and Digitalisation Strategy and Action Plan guidance](#)

⁴ European Commission (2021) [European barriers in retail energy markets](#)

Coordinated planning and option assessments need to provide clear parameters for assessing and progressing cost-benefit analysis methodology for projects to ensure that they represent fairness to specific geographies of consumers as well as GB consumers holistically. Streamlining of overall impacts on communities from numerous projects into a coordinated strategy can reduce uncertainty and make the planning process easier for consumers to engage with. It should also better exclude the investment options that are not possible in planning negotiations so as to reflect fairness across GB. This means hard limits on amounts of undergrounding, offshoring, settlement costs relative to potential avoided costs. These parameters and clearer expectations should help to guide local communities about the project settlements that can be achieved.

The current planning process presents a risk to the delivery of net zero which needs to be addressed promptly to allow the process to be streamlined as soon as possible and for which the FSO should support an accountable long term strategy. We think the local planning process in areas of multiple projects will benefit from a process of efficient negotiated settlement to achieve outcomes that reflect overall GB and local community value. Independent community representatives should be recruited where clustered projects are likely to require multiple complex impacts of large scale infrastructure on local communities. This is a particular issue on the East coast of England which will be significantly impacted by offshore wind generation needed to reach net zero.

7. Where should the government focus in our efforts to improve systems thinking and coordination across the energy system?

To ensure that the FSO's strategic planning role can reflect the evolving national and regional trends in consumer attitudes and needs, there are three key FSO characteristics we think are important for the FSO.

Firstly, the FSO should be tasked to deliver an energy system that will support net zero policy in pursuit of consumer value. Every decarbonisation decision or piece of advice from the FSO will impact the costs and capabilities of the energy system, which in turn will impact consumers. The FSO will not be able to increase industry, investor and consumer confidence in its proposals and choices if it does not include consumer engagement requirements in its systems analysis.

Similarly, if the FSO does not support routes to facilitating the required consumer engagement with low carbon technology its proposals will carry less weight. The BEIS commissioned report on net zero engagement⁵ provides numerous considerations about what forms of engagement may be necessary to support the transition. Inevitably what is communicated to consumers will be shaped by central planner assumptions.

Citizens Advice believes consumer energy advice strategies funded by the government, regulators and networks need to be better coordinated to be supportive of adaptation and align with net zero. We think the FSO could be well positioned to improve this coordination.

⁵ BEIS (2021) [Net zero public engagement](#)

Secondly, the FSO must have technical expertise in monitoring consumer engagement and behaviour change within the energy system. This should include a formal role with required engagement with consumers and their representatives to understand domestic, microbusiness, and industry consumers' current and future needs. Consumers are becoming more active users of the energy system so it is vital that understanding consumer service outcomes are the priority of the FSO. This will involve due consideration of network and system implications for risk of significant detriment, particularly to vulnerable consumers.

Thirdly, the introduction of an FSO should enable competition through a transparent common scenario or options assessment. A coordinated planning approach needs to provide guidance on high level interventions, but avoid over prescription which would centralise risk for network deliverables. Where a centralised high-level strategy is in place, it should provide better visibility and transparency that can support better competition between companies with competing interests. This can contribute to the development of an energy system design that enables the stacking of value from decarbonisation, flexibility, security and cost efficiency to promote overall value to consumers. Given the high balancing costs, high wholesale gas costs and limited ability to value local grid security, there is urgency to valuing energy based at an equitable charge reflective of system costs. Also, avoiding detailed centralised planning where possible allows for regional geographies and stakeholder interests to shape local system design consistent with a suitably flexible national strategy. The FSO might also have a role in supporting local energy system option assessments.

The balance between centralised and decentralised planning was central to our response to the RIIO Electricity Distribution 2 (ED-2) price control⁶. This balance will ultimately shape the responsibilities given to the FSO relating to advice, future scenarios and its role in the distribution system. While prescriptive and detailed centralised planning is to be avoided, the prompt move towards an FSO model is an opportunity to speed the transition to local energy markets enabled via a standardised DSO model that maximises the efficiency of system operation development and the format of stakeholder network engagement processes.

Questions on what the FSO should do

8. Do you agree that the FSO should undertake all the existing roles and functions of NGESO? If not, please explain why.

Yes - we see no reason to remove any of the NGESO functions from the FSO.

9. Do you agree there is a case for the FSO to undertake the long-term strategic functions outlined in Option 1? Please elaborate and provide any views on the functions we have outlined in Option 1.

⁶ Citizens Advice (2021) [Views on the electricity distribution network companies' draft business plans for RIIO-ED2](#)

The FSO should play a role in ensuring whole systems thinking is achieved across system operation, transmission, and distribution systems, via coordinating functions in code governance and operations, charging regimes, forecasting, network development, efficient connections, and in market operations including tendering, contracting, and dispatch.

We are seeing rapid change needed in numerous areas of energy governance, as shown by major code governance changes such as: Market Wide Half Hourly Settlement (MHHS), Access Significant Code Reform (SCR), a need for clarity on active load management, the evolving role of aggregators and reforms to supplier hub principles. Code bodies or code managers need to be working in greater alignment with Ofgem if these system changes and others are to be delivered efficiently. We expect consolidation and simplification to be the key changes to support greater efficiency of agreeing change.

A critical need for an FSO is to reduce the risk to consumers of expensive investment decisions to support net zero are not taken promptly or that they reflect poor investment choices.

As we noted in relation to streamlining and improving engagement on local impacts of network and system infrastructure (Q5), a similar approach to standardising approaches is required to cost benefit analysis to assess and deliver system changes that represent distributional fairness of impact. Currently the siloed nature of assessments across governance processes limits consideration of wider impacts and there is a lack of clarity in the role of evidence development between Ofgem and industry.

Currently the Future Energy Scenarios (FES), Ten Year Policy Statements (TYPs) and Network Options Assessment (NOA) provide the principal ESO direction to networks and industry on the development of systems and networks. However, this will clearly need to evolve as coordinated strategic network planning is needed across multiple vectors. What is needed is the clearest possible signal to industry about what markets and service opportunities will look like on a time horizon that supports investment in assets with long asset lives. This will support the development of skills, training, supply chains, and the overall deliverability of change. It should encourage competitive approaches to network development where possible, as outlined in the Energy White Paper, to ensure the efficient and effective development of both the electricity and gas system. Steps towards this approach include developing a gas NOA and longer term planning options needed to support decision making on the future of hydrogen.

The FES scenarios currently do not provide a central scenario or options assessment with clear dependencies that can provide the necessary confidence in a common approach. This appears to allow network companies to provide conflicting views on what represents value for consumers.

We would advise the immediate development of an interim BEIS led steering group that will assess the requirements, harness the opportunities and consider the risks of a system architect/central planner role. We would expect this to be a steering group

involving Ofgem, ESO and GSO that looks to align where possible the numerous processes of concurrent reform and the available and required expertise.

A key role for an interim steering group will be to decide what level of specificity is required to support a GB wide holistic network view that enables an optimised plan for taking forward low regret anticipatory strategic investments under the FSO that will enable GB energy networks to meet the net zero targets.

The value of the FSO to consumers as discussed are the system recommendations and decisions that will provide service and value. This needs the FSO structure to provide direction to investment, innovation, and consumer advice.

The RIIO process, including innovation funding, and the fragmented consumer energy advice provision in Great Britain need to be informed by the FSO to be consistent with the expectation of a net zero energy system.

Key strategic decisions will need to be informed by whole-system insight and impartial, technical advice. It will require the government, Ofgem and industry to make decisions about the future development of heat, transport and energy based on high quality whole system analysis.

10. Do you agree that there is not currently a case for the FSO to undertake all GSO roles and functions, including real-time gas system operation, as outlined in Option 2? If you do not agree, please explain why.

We agree with the reasoning provided in the consultation.

11. Do you have views on the proposal for an advisory role? What organisations do you consider would benefit from the provision of advice by the FSO? Who should bear the costs of providing that advice?

The FSO's advisory role needs more clarity regarding responsibilities and functions. Further detail on how the advisory role or advice given will be made transparent to industry, and in what cases this is suitable, is also required.

We support an advisory role for the FSO but there are some potential issues that need to be considered. Given the centrality of the future FSO to informing critical net zero policy and taking a whole system approach, it should be required to provide evidence-based advice on request to designated bodies. There must also be transparency in the advisory process, including clarity regarding the basis and evidence on which the advice is given.

This could be achieved through a duty on the FSO to provide advice and information when requested by the UK government, devolved administrations, Ofgem, or other specified organisations with responsibilities in the energy sector (such as the Committee on Climate Change (CCC), code managers, or local authorities). In the design of the FSO's

advisory role, and in related legislation, it should be stated to whom the FSO has a duty to provide evidence, advice, or information.

Following from this, and connected to our preference for a not-for-profit public model of ownership, such advisory duties should be paid for through the FSO's core funding. The FSO should not act as a paid consultant.

Costs could be shared where advice is provided in conjunction with other bodies, such as the CCC, National Audit Office (NAO), National Infrastructure Commission (NIC), or UK Research and Innovation (UKRI). This raises a further question around the consolidation of advice and the need to avoid duplication. Ways of working together and delineation of advisory responsibilities need to be built into the advisory roles of the FSO and other organisations.

The risk of overlap with the CCC also needs to be considered. The CCC has a statutory duty to provide advice on areas which, under this consultation, the FSO may also be called upon, such as the duty to provide advice on specific sectors "*in which there are particular opportunities for contributions to be made towards meeting the budgets through reductions in emissions*".⁷ There is a risk of the FSO and CCC offering conflicting or duplicated advice in the same areas. The division of responsibilities needs to be carefully defined prior to legislating for the FSO.

The consultation paper does not fully consider the FSO's advisory relationship with the devolved governments, beyond a basic duty to give advice. The Scottish and Welsh Governments each have their own responsibilities on energy which extend to advice, therefore any centralised coordination needs to account for devolution and differences in devolved governments' policies.

We further recommend that BEIS look at ways of establishing potential value of advice in the impact assessment. The lack of detail on this subject is linked to the lack of quantification in the cost-benefit analysis. Clarifying the duties associated with the advisory role will enable BEIS to provide at least some quantification of this in the impact assessment.

12. Do you have any views on the other areas where we are considering new and enhanced roles and functions for the FSO (outlined in section 3.2)?

Overall, we think the proposals in Section 3.2 outline a broad range of technical roles and strategic functions that can support the development of the GB energy system. Given the urgency of transitioning to net zero - we think there are opportunities for the prompt development of many of these capabilities, either via development of the ESO or via steering groups in Ofgem and BEIS that can be transferred into the FSO.

Broad scope to influence market design and competition

⁷ Climate Change Committee (2010) [Framework Document](#)

The energy markets that have developed in capacity, wholesale, balancing and retail are not structured to create price signals that lead to a consistent and efficient approach to incentivisation and cost reflectivity. While the scope for competition to innovate in the design of networks can be limited by monopoly operation, an FSO should be on the front foot in improving access to networks, sandboxing, developing different options that enable the incentivisation of efficient system solutions that work for generators and services that offer value to consumers.

DSO role

We welcome the proposed DSO Governance review. There may be opportunities for roles that could be coordinated by, or undertaken, by the FSO. There may be value, for instance, in FSO involvement in forecasting, regional network planning, and in the operational tendering and dispatch of DSO flexibility resources (especially where the assets may be being used also by the FSO). By working closely with suppliers, aggregators and other energy services providers, as well as networks, the FSO will be in a better position to support network planning and to anticipate, model and support the contribution of flexibility markets.

Questions on the Organisational Model

13. What are your views on our proposed characteristics and attributes of a future system operator and how the models presented would deliver against them? Are there other characteristics or attributes that we have not yet considered?

The characteristics and attributes proposed are vital to creating an FSO that is fit for purpose. In particular, the characteristic *'accountable to consumers and able to support the delivery of net zero on behalf of the public'* is critical to ensuring that the FSO works for current and future consumers, and the accountability mechanisms set out - robust regulation, alignment with strategic public policy, and incentivisation - are welcomed. As we have noted in our response to Q2, further work is needed to improve these accountability mechanisms, including meaningful consumer engagement and forums for challenge from consumer representatives.

We are of the view that FSO can be more accountable to consumers and able to support the delivery of net zero on behalf of consumers as a public body. Commercial interests of potential owners of an FSO create potential conflicts of interests, which will be more impactful and more likely as the FSO takes on greater responsibilities. To enable the FSO to take on tasks that relate to overall system and consumer value will likely be more challenging to deliver when this objective is subject to discretionary actions of the FSO that might not be aligned effectively to this objective.

The governance of such an organisation would also be more transparent through its duty to publicly disclose its activity and financial statements. In this way, accountability can be increased, for example through oversight by the NAO, budgetary reporting

through the Public Accounts Committee (PAC), or via a duty to publish information under Freedom of Information regulation.

The organisational values of a highly-independent non-private entity will be more strongly aligned with consumer interests, removing the risk of decisions made in shareholder interests over public interest. This model better enables the combination of the independent-mindedness characteristic with the ability to support the delivery of net zero on behalf of the public, as it ensures alignment with government's overarching and long-term strategic policy whilst also enabling technical experts and stakeholders to decide on the best short-term approaches and methods of implementation.

Further to the characteristics and attributes outlined, the FSO should also be encouraged to innovate, and to promote innovation within the networks. Innovative and groundbreaking technologies and approaches are required to deliver net zero, and the FSO should also be incentivised to achieve this and to further encourage it in the network. The FSO's planning role, setting the direction of system development, requires it to be able to assess consumer needs across the whole system, assess the technologies that are available to meet a specified need, and make evidence-based decisions transparently. To achieve this, the FSO needs to be at the forefront of understanding established and emerging technologies. Without a fully-developed understanding and thorough assessment of all options, it will be unable to coordinate the best response to energy system development.

To achieve this high level of expertise and understanding in innovative technologies, the FSO must work closely with research agencies, including UKRI and Innovate UK, the Catapult network, and private sector companies leading in the development of new technology. The FSO must have mechanisms and procedures in place to ensure it is able to keep up-to-date in these spaces, for example developing effective networks and relationships with these organisations or co-ordinating through working groups.

We see the major risk of this approach is that the FSO is not seen as independent and is seen as a branch of government and that its accountability is seen only to the government and Ofgem. We think it is vital that there is distance maintained between the FSO and government to enable trust in the objective of the FSO being to develop system and consumer value rather than politically influenced recommendations. We do not believe this conflicts with an advisory role that addresses questions that are framed by political options or choices.

To meet net zero, strategic central planning cannot be siloed. It needs clear ownership, accountability, and to be well trusted it should be transparent and open. If the FSO is to be independent of government and have the trust of industry to develop open information sharing relationships - it must offer an unfettered and robustly independently accountable view on what is needed to address net zero by both industry and government. This is a similar position occupied by the Climate Change Committee.

Policy set by the UK Government should clearly determine the way in which the FSO considers the options for the energy system. How the FSO optioneers possible scenarios and recommendations needs to reflect an as detailed as possible view of future energy options that will support early decisions to be made on energy investment. This will help

mitigate the risk of climate change without exposing consumers to undue risk of excess cost. To do so consistently and fairly requires a consistent approach across GB, which must be linked to the potential contribution of assets to a coordinated energy system scenario, options assessment or plan.

14. Are we considering the right organisation models for the FSO? And why?

Citizens Advice supports the option for a highly independent corporate body model, classified within the public sector, but with operational independence from government. We see this as the right model for a future FSO as it balances the need for independence and for the removal of any real or perceived conflicts of interest which may harm the drive to net zero, with the need to ensure alignment with the government's long-term strategic policy goals.

A private sector model risks perceived or actual conflict of interest within the sector. This model also does not guarantee the same level of assurance on commitment to consumers' interests as does the public sector model. The FSO will have a core characteristic of acting in the public interest, and for this reason the public model is best-suited.

The public body model will remove conflicts of interest arising from commercial interest in the sector, protecting the FSO from reputational damage which may hinder its ability to drive net zero targets. Independence of the FSO is crucial to encourage innovation and efficiency. The right balance must be struck between alignment with the government's strategic goals and the ability of the FSO to act in the best interests of current and future consumers according to its expert knowledge and in consultation with stakeholders.

Independence from the government is therefore crucial for the FSO. The consultation paper sets out the importance of operational independence from government, of transparency in board appointments, and that legislation is required to achieve this. We support this approach; whilst alignment with strategic policy goals is central to the FSO's drive to net zero, it must maintain independence so that it can explore alternative approaches to reaching individual goals, and define the most efficient paths to achieve these.

As a public body, the FSO will need to gain the confidence of industry to cultivate effective relationships and encourage information sharing. Establishing and demonstrating independence from government is one way that this can be achieved. One concern that needs mitigation is that networks may not perceive the FSO as being truly independent and so lacking the freedom to set their own positions. A consequence of this could be that companies take action to lobby the government instead of directly engaging with the FSO. Therefore visible independence of the FSO from the government is vital to establish trust, and this can be achieved through careful legislation and clearly separate operational, technical and governance structures.

The FSO's organisational structure can also exhibit this through its practices and internal culture, and a focus on its own specific purpose. By demonstrating a commitment to

innovation and developing expert knowledge amongst its employees, it will not only cultivate a robust and dynamic organisation that can support the delivery of net zero policies but will also show a culture of independent thinking, openness to innovation and encouraging competition, and an organisational focus on working with network companies to deliver the most effective and efficient solutions.

15. Are we considering the right elements for the FSO's regulatory and accountability frameworks? And why?

As outlined in Q2, it is important that the FSO offers a service that is accountable to industry, stakeholders and consumers by listening and responding to evidence provided in an expert, open and transparent manner just as it is to Ofgem and government.

16. Do you have views on the level of shareholding or control involving other 'energy interests' and the FSO at which a conflict of interest would become a concern?

Any level of widely diversified shareholding or ownership would be open to perceived conflict of interest. This is only an issue with the private FSO and not an issue with the FSO as a public interest body.

17. Are we considering the right implications of our proposals for Elexon and Xoserve?

The creation of an FSO should be designed to allow Elexon and Xoserve to continue operating as currently. If there are questions around the optimal business models for providing such functions these should be addressed directly.

We also believe the FSO should build upon ongoing work across the industry. The expertise in operation of central systems and strategic direction via industry codes are already fairly well developed in certain instances. We refer in particular to the BSC and the BMRS and also the Smart Energy Code (SEC) in its work with the DCC. During the past year they have both developed strategic thinking relating to system operation that supports greater awareness of developing system needs to meet net zero.

The SEC has set up a Strategic Working Group which looks to address strategic questions about the DCC and smart meter services to provide services to current and future consumers.

Similarly, the BSC has committed to an open data strategy and is managing cross sector engagement in the development of MHHS that is critical for decarbonising electricity.

We think the ability to develop benefits of integrated strategic planning and system operation will take time to establish and these existing efforts should be built on where they exist - much in the same way we hope the existing ESO expertise will develop into an FSO. Given the synergies between central system operation, strategic direction and

effective, practical governance in the FSO consultation, the Elexon, Exoserve and DCC we encourage BEIS and Ofgem to support this in the short term.

In both the BSC and the SEC there is a need for clear high-level strategic direction. This should be the priority to ensure the clarity of purpose in managing reforms necessary to deliver system capabilities to support net zero. The necessary strategic direction around areas for coordination to facilitate efficient system and network development needs prompt action that should complement these industry initiatives.

Questions on Implementation of FSO

18. What is your view on the preferred implementation approach? Please explain why.

We agree that the preferred approach of carrying over existing capabilities of the ESO to the FSO is the correct one. In principle this should avoid duplications and minimise the cost to consumers. A phased implementation approach would balance benefit to consumers whilst also enabling mitigation of risk to the sector and to consumers. Careful consideration needs to be given to the functions that are migrated in each phase. Priority functions should be identified based on criticality, impact, and benefit to consumers. Where possible, these priority functions should migrate as early as possible to the FSO.

We will continue to work with BEIS and Ofgem to encourage streamlined decision making in network and system planning processes that will still provide critical checks and accountability to consumers.

However, we would advise the immediate development of an interim BEIS led steering group that will set out a process and resources to assess both the opportunities and the risks of coordinated or centralised network design. We would expect this to be a steering group involving Ofgem, ESO and GSO that looks to align where possible the numerous processes of concurrent reform and the available and required expertise.

This group needs to address the immediate need to align these reforms where possible and decide on a common scenario, options assessment or central plan that will be used to coordinate activity. Concepts such as holistic network design, clustering, and offshore coordination each appear to require some form of aligned planning to increase the efficiency of fast paced network development. This will help secure a consistent approach to ensuring networks and system planning decisions reflect the key needs of consumers.

The 'strategic direction' proposed to be published by Ofgem in the BEIS codes consultation provides a form of direction for code and central systems governance that will also need to rely heavily on FSO scenario planning. In the interim this steering group should support a strategic coordinated approach to change modifications required to support reforms necessary to develop and harness significant increases in low carbon technologies. This is required to ensure the speed of offshore coordination. The

prioritisation and resource guidance for codes by this group can support change. This might also require additional staffing within central systems to oversee the management of this process.

The proposed steering group should help develop an approach to designing and establishing an enduring central planner function that can become part of the FSO as soon as possible. The central planner function should eventually help to utilise the FSO expertise in system operation, but also importantly, network planning to help reduce the information asymmetry between networks and Ofgem. This will be necessary to ascertain opportunities where network competition will provide value to consumers.

Lacking a clear interim arrangement for coordinating principles of accountability in centralised planning, or a timeline for a long term transition, potentially slows the process and will limit stakeholder confidence in the accountability of coordinated planning.

19. Based on the areas where we are considering new and enhanced roles and functions for the FSO, which of these should be prioritised for development? Please explain why.

Please see our answer to Q6 which sets out priority areas.

20. What do you believe are the risks to implementation? How can these be mitigated?

The immediate development of an interim steering group is advisable. In addition to responsibilities already outlined, the steering group could play a role in overseeing implementation. A steering group comprising central stakeholders Ofgem, BEIS, the ESO and GSO, will be key to coordinating not only the FSO's design but also the implementation process. Bringing together sector knowledge and technical and operational expertise, the group should have oversight of all implementation activities and project manage the delivery of transition.

Governance, responsibilities, and lines of accountability for implementation need to be clarified before implementation starts. Numerous organisations and bodies will be involved in implementation activities and oversight, and lines of responsibility, accountability, and reporting need to be made clear. We would welcome further engagement on this subject as accountability and transparency are vital to ensuring a smooth transition and mitigating the risks for consumers.

Risk to implementation may emerge from issues that delay the timeline, for example a delay in setting up governing boards or in scheduling for primary legislation. The implications of delay are increased uncertainty for consumers and for the sector, and longer lead times on delivering net zero activities. Ofgem and BEIS should work to ensure primary legislation is scheduled as early as possible.

As noted in Q18, we agree with the proposed approach. We note that existing capabilities that sit with the ESO would be used as the foundation of the FSO, and that this proposal decision has been made to save money and time. However, there are some risks that come with this, which need to be considered now to avoid points of failure that may increase the cost to citizens further down the line.

Given the required independence of the new body, the technical capabilities have to be separated from the platforms at National Grid. Further information on how this separation (and migration to new IT platforms) will take place is needed. These platforms will also need the capacity for the new functionalities of the FSO. An assessment is needed about what extra capabilities can be accommodated. More information is also needed on who has responsibility for the technical work, and ultimately who is accountable for delivering this implementation successfully on time and to budget with minimal disruption for consumers.

Following the foundation of the FSO, additional capabilities are proposed to be added in sequence according to priority for consumers and net zero. More information is needed on what capabilities come under this category, and in what order they have been prioritised. BEIS and Ofgem should work with consumer representatives to ensure that sequencing accurately reflects the needs and priorities of consumers.

21. Do you have any comments on potential implications of implementation for you, your organisation, or other stakeholders?

The FSO constitutes a new way of working for system operation, and related new avenues for representing consumers' interests. Citizens Advice are keen to be engaged in this process, to work with the FSO to deliver a coordinated approach. Citizens Advice will also continue to develop our role working with the ESO to protect consumer interests until transition is complete.

During implementation, visibility of processes and the timeline on which they move over to FSO jurisdiction would be welcome for us to be clear on who we need to be working with to achieve the best outcomes for consumers.

Citizens Advice already plays an important and central advisory role for energy consumers. We currently work closely with energy stakeholders, including the ESO, DNOs, Ofgem, BEIS and other advice organisations such as the Energy Savings Trust and National Energy Action to ensure that we are supporting citizens to make the best choices for their energy consumption. This is a role that Citizens Advice could continue to play following the creation of the FSO. Whilst the FSO will have an advisory duty to government and energy sector organisations, it is not within scope - or feasible - for the FSO to play a role in individual-level consumer advice. Citizens Advice is well positioned to coordinate consumer advice.

The FSO could inform advice organisations of potential paths, technologies and approaches that are likely to impact customers so that we can provide consumers with relevant and timely advice. The FSO will be best placed to provide this overarching direction to consumer advice organisations by drawing on its holistic view of the system,

and advice providers are likely to be best placed to interpret this and deliver it to consumers.

22. What is your view on the position that there are likely to be cost savings across the energy system from an increased “whole system” view, as described in paragraphs 47-52 of the IA? If so, is the potential magnitude of savings illustrated fairly in the IA? If not, why not?

Given the range of the roles proposed for the FSO we think that the likely benefits are likely to be significantly understated. We think the magnitude of savings is likely to exceed what has been set out given the scale of investment in the energy system and the value of a small overall improvement in efficiency or success in carbon mitigation.

23. What is your view on the conclusion that policy intervention is likely to increase the benefits of onshore electricity network competition, as described in paragraphs 53-59 of the IA? If you agree, is the potential magnitude of savings illustrated fairly in the IA? If not, why not?

No view.

24. Do you think that the impact assessment has identified and considered the key costs and benefits of policy intervention? If not, can you provide details on other impacts that have not been considered?

The IA makes a number of high-level assumptions, and has many unquantifiable impacts. Whilst we accept that the energy transition and the establishment of an FSO currently entails a number of ‘known unknowns’, there are places where more work can be done to fully consider all costs and benefits.

25. Do you think that the distribution of impacts is fairly represented, with impacted groups correctly identified? Outlined in table 5 of the IA.

No view provided

26. We invite respondents' views on whether the proposals for energy system governance reform may have a different impact on people who have a protected characteristic (age, disability, gender re-assignment, marriage and civil partnership, pregnancy and maternity, race, religion or belief, sex or sexual orientation), in different ways from people who don't have that characteristic.

The impact of the future energy system might impact protected characteristics in numerous ways. Energy use is highly sensitive to a consumer's circumstances so the way in which the energy system operates will impact different communities in different ways.

For example, the way in which the anticipated consumer journey develops will provide different service options, accessibility and affordability characteristics which may have implications for protected characteristics.

The interests of those with protected characteristics needs to be clearly represented in the intention of this consultation: establishing the FSO. This means there needs to be a clear mechanism for the qualitative consideration of consumers and representative views on system design impacts for consumers. As outlined in the introduction we see a key role will be the FSO working with consumers and consumer representatives to inform their evidence and decision making.