REA Response to
Energy Future System Operator Consultation

The Association for Renewable Energy & Clean Technology (REA) is pleased to submit this response to the above consultation. The REA represents a wide variety of organisations, including generators, project developers, fuel and power suppliers, investors, equipment producers and service providers. Members range in size from major multinationals to sole traders. There are over 500 corporate members of the REA, making it the largest renewable energy trade association in the UK.

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?

Yes. Having a strategic body that is suitably independent from contractual operations is going to be crucial for enabling both the gas and power grids to be able to decarbonise in line with net zero.

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?

The FSO provides the opportunity to incentivise the energy network to meet the net-zero target over the longer term. Our members, on balance, have the view that these technical roles need to be focusing on the strategy of the energy network as a whole and be distinct from the day-to-day operations currently fulfilled by National Grid ESO. Developing a longer-term strategy at a national scale requires a comprehensive understanding of long-term trends and available current and emerging technologies. In addition, a technical capacity to undertake the modelling of future renewable and energy storage capacity and system flexibility requirements is necessary. Establishing a Future System Operator in the electricity sector will push forward the wider network operators to carry out the required changes and reinforcements in the network, crucial for reaching net-zero.

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

Yes, as both the electricity and gas systems will have a central role in the transition to net-zero, they should be equally considered in the FSO. To achieve net-zero, both networks will need to change significantly over the coming decades. As we move towards net-zero, both electricity and gas systems will become highly correlated. For example, the heating system's planned electrification will reduce demand on the gas grid, transitioning towards biomethane and hydrogen in the medium term. Further, there is significant uncertainty surrounding the technologies and their implementation in a future national energy system. Hence these networks need to be considered in

conjunction as there is a relationship between the two that has yet to be determined and is likely to evolve during the transition to 2050.

However, we also note that there could well be benefits realised if the contractual day-to-day operation of the gas and electricity grid continue to be separate while the strategic body looks at both. This allows the operation bodies of each to effectively compete against each other, given both will likely have a role in the decarbonisation of heat and transport. This may deliver additional benefits which should be explored further.

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

On balance, it is REA members' view that the current arrangement of grid governance and system operation may create perceptions of conflicts of interest and may not sufficiently prioritise the longer-term planning of Net Zero at scale. Hence the establishment of a separate organisation with strategic responsibilities is welcome. Indeed, if the FSO was established within National Grid, there is likely to be the potential for a conflict of interest between these two organisations in terms of objectives. This is a result of the National Grid handling the day-to-day management of the energy network, which may involve different objectives to the longer-term system planning which the FSO would oversee.

However, it is currently the majority of REA members' view that with these potential conflicts of interest in mind, the FSO should not have responsibilities for contractual day-to-day operations as well as strategic oversight as currently proposed. The REA proposes that the FSO should only contain strategic roles, and operational roles should remain with National Grid. This proposed separation carries organisational benefits as the establishment of the FSO focusing purely on a longer-term strategy would require fewer migrations of roles and responsibilities from the National Grid to the new organisation.

For example, the FSO role will be able to independently enforce flexibility, the connection of renewable generation, and grid stability for electricity. In addition, the wider grid operators will carry out an operational function by facilitating reinforcements for early operation of grid stability solutions.

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

There are several issues with the current arrangement of roles for the UK energy system, which influences its ability to transition to net zero, among other strategic aims. The REA identifies the current structure of responsibilities allowing for the potential to create at least a perceived conflict of interest within National Grid and the longer-term system planning that is needed. Hence the development of the FSO can help resolve this conflict of interest as outlined in Q4.

The pressures of planning the future stability, capacity, and management within the UK energy system to complete the transition to net-zero necessitates a significant change from existing local and system-wide practices.

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?

While progress has been made via initiatives such as the Smart Systems Flexibility Plan 1 &2, there are still examples of a lack of joined up planning and delivery of Net Zero across the energy system. These can arguably be most prominently seen in recent years in the Targeted Charging Review (TCR) grid charges decisions and the Electric Vehicle (EV) charging sector.

Targeted Charging Review

Ofgem's changes to the system of grid charging makes it actively more expensive to install small scale renewable generation, energy storage and EV charging devices on business premises, and penalises those that have already done so. This is combined with upcoming proposed changes to Forward looking charges for the grid network that would remove temporal price signals as well as making smaller scale renewables pay BSUoS charges for the first time, therefore directly contradictory to decarbonisation objectives.

Similarly, TNUoS encourages generators to locate close to the demand, which is appropriate for fossil-fuelled generators, whereas renewable projects are built where renewable energy sources are available. This leads to disproportional charges in locations where developers need to deploy large amounts of renewable generation.

Electric Vehicle (EV) charging sector.

The EV sector has grown considerably with rapid uptake of new EV cars and there has been welcome Government support for the sector, however the EV charging market faces the complicated, slow and expensive grid connections regime that is also holding back distributed renewable energy development. For example, the development of an 'ultra-rapid' EV charging network requires higher voltage connections, but these are expensive and lengthy to deliver, therefore the problems in the power sector (electricity grid connections) have impacted the decarbonisation of other sectors (transport and in the future possibly heat as millions of heat pumps are connected to the network).

Role out of Three Phase Power

Finally, to note a further key barrier currently not being directly addressed in government building policy. Typical domestic and small commercial buildings are connected to the grid via single-phase power. For high load items, such as heat pumps and fast EV car charging require three-phase power. The slow uptake of three-phase power remains a bottleneck for the adoption of more environmentally friendly

technologies. As the REA's Three Phase Report demonstrates it would be beneficial for building regulations to require all new-build houses to be connected to three-phase power. [1]

[1] https://www.r-e-a.net/wp-content/uploads/2019/10/REA_EV_Three_Phase_Report_FINAL-PDF-01-08-18-hi-res.pdf

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

The establishment of an FSO is a suitable means to address the issues identified in Q5. The proposals for the FSO's roles should go further than currently planned by focusing on introducing a range of measures that would disincentivise carbon-intensive projects and incentivise affordable renewable technologies. This could be achieved through a contract length mechanism that links the length of a contract to the carbon intensity of its generation, for example. The FSO should also focus on the need for flexibility of supply within the energy system, which can be achieved by decentralised storage and other means. Historically there has been a particular mismatch between power and heat, and transport policy development, with the need for a more joined-up approach. The accompanying grid code review proposals may help ease some of these concerns, but a body considering all three elements in the same place would be useful.

This consultation does not address what criteria would be used to determine when a project or proposal would be considered by the FSO and what would be a consideration of the NGESO. For example, would these be based on the proposed duration of contract or capacity threshold by which it becomes the responsibility of the FSO? In addition, the consultation also does not develop a potential framework for how BEIS, NGESO and FSO would coordinate projects and navigate tensions. These considerations have a serious bearing on the effectiveness of this consultation and should be the focus of future stakeholder engagement.

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

As discussed in Q4, there exists the potential for a conflict of interest between the immediate needs of the energy grid and its future needs (c. 20-30 years). Hence the FSO should not undertake the existing contractual roles of the NGESO. The REA's members currently support the day-to-day operations remaining within NGESO, with long term strategic planning being a distinct role of the FSO. This proposal creates a more straightforward objective as many functions can stay within the NGESO with new roles created as part of this consultation being placed within the new organisation.

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

Yes. There is significant uncertainty in how the gas network will evolve to meet the net-zero target and its future role in the overall energy market. These views were also shared in an Exeter university report outlining the need for a separate organisation for planning gas system changes. [1]

[1] See page 15: http://projects.exeter.ac.uk/igov/wp-content/uploads/2019/08/IGov-Getting-energy-governance-right-Sept2019.pdf

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

Nominally all day-to-day operations should remain outside of the FSO. Time scales are not discussed in the proposal and would have significant implications for running both the FSO and National Grid in this question and in others.

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 could advise BEIS and Ofgem on capacity auctions as they have expertise on the potential synergies between technologies. This is particularly the case as the FSO is uniquely placed to understand the potential connections between long contracts, the pricing mechanisms or any regulatory changes which impact the implementation of new technology in the future. The advisory role which the FSO could participate in is not restricted to technical expertise. The data the FSO would hold on capacity projections, and other data sets, would be valuable to the wider market in aiding future efficiency and capacity improvements. This would be especially useful to bodies such as the CCC or The National Infrastructure Commission who could take further consideration of grid needs into future carbon budgets. Finally, such information could also be expected to help the National Infrastructure Bank to prioritise future investment in grid development.

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)?

The views outlined in 3.2.3 consider appropriate system planning and development objectives.

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?

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

A public body is favoured as the decisions of the FSO need to be made around multiple developing technologies over the longer term. In addition, having the FSO as a public

body removes it from commercial interests, affecting its prioritisation. A public body is also favourable when considering the implications of the FSO having a broader advisory role for government and non-governmental bodies.

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

The SPS is a robust means to set regulatory and reporting requirements for the FSO. However, further consideration is needed on how the FSO will be aware of and technically cognisant of developments in the energy sector. These considerations are essential if the FSO is to be effective in long term strategy.

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?

The REA favours the development of a public body that has an independent mandate. This proposal avoids the complications of mitigating shareholder interest.

A private ownership model is less favourable when considering conflicts of interest over the advice which may be charged. Advice needs to be impartial and given with Net Zero, fair competition, consumer interests and value for money as its primary consideration.

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

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

Our members can see the benefits of both approaches; however, are generally supportive of a more immediate transfer of strategic responsibilities to the FSO. This leads to less disruption in the longer term and more explicit industry understandings of the lines of authority and organisational scope. In addition to this, in line with our responses to Q4 and others, if day to day operations are to remain within the National Grid, then much of the early stages outlined in the implementation proposal are avoided. The REA's suggestion for the FSO to consider only strategic aims should further bring organisational simplicity and the potential for cost savings as existing responsibilities do not have to migrate.

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.

The priorities of the FSO should be oversight and strategic planning of capacity and flexibility within the Electricity and Gas network. This is a distinct role for the FSO, and comprehensive long-term plans must be established and made clear for the benefit of the grid network and the market more widely.

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

Consumers and businesses across the country bear the cost of the transition to net-zero. Therefore, consumer interests must be protected, with appropriate measures in place for vulnerable customers. While Ofgem is responsible for overseeing these risks, the development of the FSO may create additional constraints on Ofgem and other consumer interest groups due to an increase in volume and consideration over longer time scales, which may have unclear implications.

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

The REA finds that current ESO stakeholder engagement is done well and has produced some useful forums and initiatives (e.g. Power Responsive) in the recent past. It is hoped that similar stakeholder engagement is continued under the new FSO in the future.

22. What is your view on the position there are likely to be cost savings across the energy system from an increased "whole system" view, as described in paragraphs 50-55 of the IA?

The REA agrees with this position. Previous developments have been piecemeal, which has produced costly solutions. A whole system view will likely bring increased cost savings along with a clearer strategic aim to help meet the net-zero transition.

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?

The REA agrees with this position, although is not in a position to evaluate the extent of potential savings.

24. Do you think that the impact assessment has identified and considered the key costs and benefits of policy intervention?

We believe most of the critical issues have been covered in the Impact Assessment.

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

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 (gender) or

sexual orientation), in different ways from people who don't have that characteristic.

September 2021