

## **Regional Energy Strategic Plan - Policy Framework Consultation**

### **Introduction**

We are pleased to offer our response to Ofgem's consultation on the RESP policy framework. The response has been prepared by the following independent industry professionals who are strong advocates of whole system thinking and who together bring a wealth of experience in energy system planning at national, regional and local area level.

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### **General Observations**

The proposal to create RESPs is very welcome as it addresses deficiencies in current arrangements that are now being amplified by the energy transition. This includes the need for a more geographically granular assessment of energy needs and opportunities, including across energy vectors. An important output from the RESP framework will be the development of an energy vision and pathway for each region, consistent with national strategic objectives but addressing regional challenges, and capitalising on local place-specific opportunities. The development of RESPs should provide new insights for network operators and assist them in creating well justified business plans.

One particular benefit of the RESP framework is in being able to identify place-specific energy needs and solutions, including for sectors where the increased use of technology is creating new demands on energy supply, for example agriculture where processes are becoming more data driven. In that regard, better coordination between strategic transmission system and regional distribution system planning would be helpful in gaining community acceptance of new transmission lines, for example if communities were assured that their energy requirements were being given equal weight to national requirements and delivering local economic benefits. It follows that strategic energy planning needs to be end-to-end and holistic with RESPs identifying the current and future (and often place-specific) needs of the region and feeding these requirements into the national SSEP and CSNP.

Given that a key aim of the RESP framework is to deliver whole system optimisation, it will be important that Ofgem exercises sufficient oversight of NESO and the Strategic Boards to ensure their governance of top-down and bottom-up interactions between RESPs and the SSNP and CSNP is creating real value for customers through delivering measurable regional and whole energy system benefits. Over time, we would expect to see the emergence of best practice, including a common approach to optioneering

and benefit/impact assessment, looking across energy vectors where appropriate, identifying optimum pathways for the region, and determining priorities for investment. However, it will take time for best practice to emerge, and it will be important for NESO, as the hub, not to be over-prescriptive in the shorter term.

Clearly much good thinking has been put into the policy framework, but this is a particularly complex challenge which will take time to fully implement. Building on progress made by some County, Unitary and Combined Authorities in implementing local area energy planning methodologies should provide valuable pointers in terms of implementing the RESP framework at a wider regional level whilst also enabling the RESP framework to deliver early benefits.

We have attempted to address each of Ofgem's questions fully in our consultation response and we trust this will be helpful in informing Ofgem's decision on the RESP policy framework later this year. In the meantime, we would be pleased to address any questions that might arise from our response.

## **Responses to Questions**

### **Q1 - What are your views on the principles (in paragraph 2.8) to guide NESO's approach to developing the RESP methodology? Please provide your reasoning.**

We agree that within current governance and institutional arrangements there is a lack of coordination and accountability for whole energy system planning at both national and regional level. The four principles stated in para. 2.8 are broadly correct.

**Place-based** – local area energy planning is essential to revealing regional challenges and place-specific opportunities that would otherwise be opaque to NESO operating as the national ISOP. For example, specific locations within a region might be well suited to heat networks; some regions may have major transport hubs (road, rail, marine, aviation) that might present opportunities for cross energy vector integration; and some regions may have industrial complexes that might be viable hubs for hydrogen production and CCS, for example where current manufacturing processes such as those associated with steel, glass, ceramics and cement production pose decarbonisation challenges.

A regional approach would also better identify suitable locations for onshore wind and solar PV farms and energy storage. This is particularly pertinent given the Government's ambition to double onshore wind capacity by 2030 and GB Energy's plan to quadruple solar PV investment. A regional approach would also better identify any community impact or environmental mitigation measures necessary to ease the process for obtaining landowner consents and gaining planning approval for new energy infrastructure.

**Whole System** - The RESP must be a whole system plan, not only in respect of gas, electricity, and heat, but also transport, industry and land use (as appropriate to the region). However, whole system planning needs also to extend to interdependent sectors such as telecoms, digital, and water. This is necessary to ensure the energy system both adequately serves, and is served by, these sectors. Where applicable to the region, the whole system plan should embrace hydrogen (and derivatives thereof) as well as CCS infrastructure insofar as measures undertaken at a regional level might complement, or be influenced by, measures undertaken at national level.

**Vision led** - An opportunity surrounding the SSEP, CSNP, and RESP is for the plans to be vision led and have a longer-term perspective, as well as giving greater confidence over shorter-term delivery. Whilst such longer-term projections can be considered to already exist in the form of DNOs' long-term

development statements (LTDS), these take an essentially 'electricity' perspective with little consideration of alternative energy transition pathways. Moreover, the focus of DNOs' and GDNs' business plans from both a delivery and regulatory perspective has tended to be short-to-medium term with no explicit alignment to longer-term pathways.

**Proactive** - Adopting a longer-term perspective must not result in lock-in to a particular pathway even over the medium term. New challenges and opportunities must be proactively explored, developed, and incorporated within the RESPs through effective governance and change-control. The principles of emergent design, as adopted by the IT sector, may be helpful to consider in this respect. For example, emergent design has application in integrated communications systems for energy networks and hence could make an important contribution to the planning of integrated whole energy systems which will be increasingly characterised by more advanced digital information systems. Planning for emergence also has application in the context of an evolving energy system whereby options to incorporate not only important technologies which have yet to reach full maturity (for example AMRs, SMRs, tidal stream, and tidal range for electricity generation) - but also technologies which may be yet to emerge - are enabled rather than bypassed by the planning framework. We therefore agree that the planning methodology should be proactive but also capable of reacting to emerging challenges and opportunities, especially given current uncertainties in terms of how the energy transition will impact some sectors, and over what timescale. Adaptability and agility must therefore be established within the RESP framework and its governance mechanism. We expand on this in our response to question 2.

**Hub and Spoke Model** - We broadly agree with the proposed RESP methodology and operating model, including the hub and spoke delivery model and the respective responsibilities of each party. As the consultation notes, the implementation of RESPs will require further consultation between the 'hubs' and 'spokes' to develop a practical working framework for each region, recognising that some regions might be more advanced than others in terms of developing local area energy plans. In that regard NESO should be open to proposals from the RESP regions for refining the methodology and operating model, and customising it to best serve the nature of each region whilst continuing to maintain alignment with the guiding principles, and strategic alignment with the national transition pathway. It follows that NESO will need to adopt a collaborative rather than directive approach, particularly during the early stages of developing RESP capability, seeking to jointly develop the RESP methodology whilst capitalising on DNOs' and GDNs' expertise in modelling and forecasting at a regional level. We believe exercising some flexibility during the development stage will be helpful to the objective of establishing regional energy strategic planning capability by late 2025. Even so, we believe this will prove to be an ambitious target, at least for some regions.

We commend a stage-by-stage approach to forming and operating the RESP framework, seeking to build relationships, understand local opportunities and sensitivities, and to achieve some 'early wins' to demonstrate effectiveness. 'Right first time' is unlikely to be achievable and good outcomes should be the initial aim, progressing towards optimality in the longer term.

**Q2 - Do you agree that the RESP should include a long-term regional vision, alongside a series of short-term and long-term directive net zero pathways? Please provide your reasoning.**

Being vision-led is important but a long-term vision (say 25 years) to provide a clear forward-looking direction for the energy system (albeit with multiple credible pathways) must be complemented by a nearer-term development plan (say 5 to 10 years) that reflects the region's characteristics, and a

delivery plan that addresses the region's priorities whilst ensuring alignment with national objectives. In that context we agree that 2030 is an important milestone. Alignment between national and regional planning will involve iteration between NESO and the RESP regions to achieve the optimum whole energy system plan from both a national and regional perspective.

We note the proposal that pathways should be presented down to LSOA level which equates to between 400 and 1,200 households. By way of perspective, that would typically represent the number of households served by a single medium voltage (e.g. 11kV) circuit. Whilst DNOs will certainly need to model demand growth at this level of granularity (or lower) to ensure timely and targeted network reinforcement, and/or procurement of flexibility, we would suggest presenting pathways at a higher level of abstraction (for example primary substation level) might be a more realistic goal (note: even at this level it would typically result in several hundred pathways for a single DNO licensed operating area, and hence rather more for an RESP region).

We would emphasise the importance of a realistic delivery plan which fully considers the capability of the supply chain in terms of lead times for both equipment and human resources, but also logistical challenges surrounding the transport of materials, and the disruption to communities and the local economy arising from installation works. A further factor to consider from a deliverability perspective during an increased programme of network investment is the impact of power system construction outages on security of supply. Whilst the nearer-term development and delivery plan must provide certainty of direction to ensure timely investment, agility and adaptability will be essential to respond effectively to opportunities and challenges emerging during the delivery phase.

Developing nearer-term regional pathways should ensure that short-term progress is not inhibited during the development of a longer-term pathway. This is particularly relevant given current uncertainty over the ultimate decarbonisation pathways for transport and heating - particularly long-haul freight, rail traction, and industrial heat. Indeed, there is some doubt over the practicality of eliminating the use of natural gas for home heating for many UK properties, and hence uncertainty over the potential need for retaining gas distribution infrastructure either as a carrier of natural gas, or potentially blended gas or pure hydrogen (for example to serve hybrid heating systems).

The consultation notes that the RESP will not be an all-utility regional master plan. However, it must be more than simply an electricity and gas distribution network plan that is informed by other vectors. An important opportunity created by RESPs is to optimise at a regional level the interactions between energy vectors for both energy supply and energy demand, including options for energy conversion, storage, and arbitrage. Only through this approach will the investment in energy infrastructure be optimised. Moreover, regional inter-sector interdependencies between electricity, digital telecommunications and water must also be considered as key inputs to the RESP. The consultation notes that the RESP will be vision-led but it must also be mission-led with a clear focus on deliverability.

**Q3 - Do you agree there should be an annual data refresh with a full RESP update every three years? Please provide your reasoning.**

The scale and pace of energy system transition suggests that the RESP will need to be a 'live' plan that is under continuous review so that it can adapt to new inputs arising from regional whole energy system studies, but also respond to inputs from NESO acting as the national ISOP (or hub). Visibility of a 'live' RESP will require interactive tools to enable stakeholders to keep abreast of developments (not dissimilar in principle to DNOs' on-line interactive DFES publications). An annual update would maintain the horizon for both the long-term vision and nearer-term development plan (i.e. each year

the plan would roll forward by one year). We believe this approach would be superior to a notional 3-yearly refresh in that the longer-term vision would then always be looking (say) 25-years ahead and the nearer-term development and delivery plans would maintain a (say) 5 to 10-year horizon, consistent with planning approval, resource planning, and strategic procurement lead times.

A more formal review and update every five years would be appropriate for informing and supporting DNOs' planning processes in preparation for submission of well justified business plans to Ofgem at each price-control (similarly for electricity and gas transmission, and gas distribution business planning processes). The current two-year displacement between the DNO regulatory cycle and the transmission and gas regulatory cycles is not helpful in this respect. From a whole energy system coordination perspective, consideration should perhaps be given to bringing these into alignment.

We note that the consultation proposes that there will be no requirements on local government to follow the direction of the RESP. However, given the importance of coordination between all aspects of regional development planning, a backstop position would be advisable, highlighting any contradictions that arise with mechanisms for resolution. In particular, the granting of outline planning permissions by local authorities for sites considered through the RESP process to be best suited for onshore wind and solar PV farms, and battery energy storage systems, would be a key factor in eliminating the current queue of speculative connection requests that act as a barrier to the effective strategic planning of network investment, and ultimately the delivery of an efficient, coordinated and economic system of electricity distribution.

Alignment is key to all parties, including Ofgem for robust price control decisions. Albeit the proposal is that Strategic Boards will not have responsibility for signing-off RESPs, their recommendations should be regarded by Ofgem as key factor in assessing the relevant network companies' well justified business plans, which in turn should reduce the need for post business plan submission challenge. On the subject of well justified business plans, where beneficial, these should include cross-DNO/GDN licensed operating area solutions, the identification of which is a potential benefit of the RESP framework.

**Q4 - Do you agree the RESP should inform the identification of system need in the three areas proposed? Please provide your reasoning, referring to each area in turn.**

We agree that providing consistent assumptions, setting out the spatial context for capacity needs, and informing strategic network investment are three key aspects of identifying system need.

**Consistent Assumptions** - Maintaining consistent assumptions should be assured through the hub and spoke model, and the adoption of agreed pathways, but 'consistency' of approach must not be conflated with 'standardisation': the benefit of regional strategic energy planning is the ability to recognise place-specific energy characteristics. For example, whilst profiles for consumer behaviour, flexibility provision, and low carbon technology use (EVs, heat pumps, behind-the-meter generation, and energy storage) might share some commonality, they will also be impacted by regional variations (e.g. public transport availability, housing stock, socio-economic and demographic factors, weather patterns, etc.) In the case of EV uptake, this is likely to be impacted by the availability of public EV charging infrastructure which currently exhibits significant regional variation. A benefit of a regional approach over a purely national approach to energy system planning is the ability to recognise place-specific factors impacting patterns of energy usage.

**Spatial Context for Capacity Needs** - Spatial context is key to understanding network infrastructure need. For example, the degree of spatial coincidence between generation and demand is a key consideration in determining network investment need at medium and higher voltages (and/or the scope for flexibility). This also extends to energy storage, conversion and arbitrage, for example green hydrogen production and battery energy storage, both of which will impact local network power flows and hence capacity need. Spatial context will also be important in considering the energy transition, for example differentiating between locations in terms of their place-specific decarbonisation challenges and opportunities. This includes residential locations where home EV charging (and potentially V2G/V2H) can be expected to become common because residents have access to off-street parking. Similarly, whilst the objective is ultimately to discontinue the use of gas boilers for domestic space and water heating, there will be residential areas with housing stock that is unsuited for heat pumps. In both these examples, the impact on electricity distribution systems will be significantly different.

**Strategic Network Investment** – Achievement of increasingly challenging objectives for energy decarbonisation requires consideration of not only the requirement for infrastructure investment but also its timing, taking account of supply chain, outage planning, and funding needs. Without advanced strategic investment, energy decarbonisation opportunities are likely to be delayed with a risk that national carbon budgets will be missed. Strategic investment in networks will involve some stranding risk, either because more capacity is installed than turns out to be required, or because the capacity provided turns out to be inadequate. The use of procured flexibility can be a useful hedge against asset stranding pending greater certainty over future power flows (due to either generation or demand) but also carries the risk of creating a substantial bow wave of investment that exceeds supply chain capability. As a general observation, any risk of asset stranding due to premature investment is likely to be outweighed by the risk of being unable to deliver infrastructure in the required timescales, with a resulting impact on achieving decarbonisation targets. Compared with recent years, the high pace of the required energy transition will result in a reduced risk of stranded assets, and for any stranding to be relatively short duration, and therefore of low financial consequence in net present value terms.

We note that the RESP will form the basis for detailed network forecasting and planning by the network companies and their resulting investment plans, and that network companies will remain responsible for load forecasting and solution optioneering. For avoidance of doubt, nothing in the RESP methodology should prevent network companies undertaking such works that they deem necessary to meet their statutory and licence obligations, for example with regard to safety and security of supply.

**In Summary** - in terms of energy infrastructure, the RESPs should determine what needs to be built, where, and by when, based on consistent assumptions and robust methodologies for determining spatial (place-specific) investment needs, and the assessed critical timing of capacity for each energy vector, taking account of any local constraints that might limit options or delay delivery.

**Q5. Do you agree technical coordination should support the resolution of inconsistencies between the RESPs and network company plans? Please provide your reasoning.**

We agree that through taking a whole system view, there is an opportunity to identify optimal solutions across different vectors, and increase the efficiency and effectiveness of decarbonisation measures, whilst reducing costs to consumers. However, we would see this being best assured through a collaborative forum between NESO and the TOs, DNOs and GDNs rather than simply a 'top-down'

process managed by NESO. In particular, DNOs have established comprehensive modelling capabilities to understand the impact on distribution network power flows and substation peak demand arising from both conventional and low-carbon technologies, including distributed generation and energy storage.

It is important to also acknowledge that effective whole energy system optioneering will depend on inputs from regional energy stakeholders who will have an important place-specific perspective on the relative feasibility and effectiveness of different approaches. Technical coordination is important, but not at the expense of suppressing innovation and exploiting (potentially sometimes unique) regional opportunities.

In that regard, we feel there is a further opportunity for better technical coordination between NESO, TOs, DNOs and GDNs (but not excluding other actors) in terms of consistent and effective innovation rollout. Innovation incentive funding mechanisms (including IFI, RPZ, LCNF, NIA, NIC and SIF) have delivered a vast number of successful projects (and continue to do so) and whilst efforts are made to disseminate outcomes (including through the ENA Innovation Portal and the annual Energy Innovation Summit) the sheer number of innovation opportunities that have arisen makes it difficult for any single DNO (or TO, or GDN) to be confident that every opportunity has been exploited on the energy system they are responsible for. Many of these innovations are particularly pertinent to efficient energy transition and it will therefore be important to ensure that 'solutions in waiting' are now enacted (or where necessary further developed to a higher Technology Readiness Level) in a coordinated way across the whole energy system.

**Q6. What are your views on the three building blocks which come together to form the RESP in line with our vision? Are there any key components missing?**

As stated above, we agree with the concept of a long-term vision with agreed priorities and a short-term pathway, providing consistent assumptions, setting out the spatial context for capacity needs, and informing strategic network investment. The three building blocks broadly represent the requirements of the RESP process.

**Modelling Supply and Demand** - Modelling of supply and demand at a local level is already undertaken comprehensively by DNOs and GDNs. In respect of electricity networks this informs both short and longer-term investment decisions and is the basis of DNOs' Distribution Future Energy Scenarios (DFES) and Long-Term Development Statements, as well as their infrastructure delivery programmes and their business plan submissions to Ofgem. This capability will be an important input to developing RESPs.

As stated in our response to question 3, a particular challenge is modelling the impact of future distributed generation and energy storage connections to the electricity distribution network. This arises due to the current uncoordinated and 'unplanned' approach to the development of solar PV farms, wind farms, and battery energy storage systems, with many speculative applications being put forward prior to land acquisition or outline planning approval, the majority of which will not be taken forward. We acknowledge that steps are being taken by the ENA to refine the process in order to help identify purely speculative applications. However, a coordinated approach based on identified preferred sites within the region for generation and energy storage development would enable informed modelling and greatly benefit the development of DFESs and LTDSs.

Going forward the modelling needs to include both gas and heat, and potentially hydrogen, and needs to consider credible cross-vector pathways. Modelling also needs to be informed by locally determined (place-based) challenges and opportunities taking account of local factors such as environmental

drivers and economic growth opportunities. In terms of modelling demand: since public EV charging infrastructure will place location-specific demands on electricity distribution systems, it follows that charge point operators are a further important source of input to Table 2 in the consultation. This will involve mapping the delivery plan to DNO/GDN licensed operating areas. Reconciliation with NESO's SSEP and CSNP will also be necessary to ensure that RESP pathways and projects in aggregate meet national energy policy objectives.

In terms of pathways, there are key strategic decisions that Government will need to make to inform both the SSEP and RESPs. For example, at a national level, the identification of hubs for hydrogen production and transportation infrastructure (including road, rail, and marine as appropriate to the region) will be a key input to the RESP, as will CCS infrastructure as a means of abating GHG emissions from industrial processes (including blue hydrogen production) or generation (e.g. BECCS).

**Identifying System Need** - A key benefit of the RESP process should be that prospective wind, solar and BESS developments can be gauged against both national and regional need, constraints, and opportunities. The result should be an agreed programme as a direct input to DNOs' network development plans. This should reduce the current resource-intensive (and resource wasteful) process referred to under Modelling Supply and Demand above whereby DNOs (and TOs through the SoW process) are presented with speculative connection applications from generation and energy storage developers who in many cases have yet to receive even outline planning approval, and who ultimately will take forward only a small proportion of the projects (or on-sell the land to prospective developers).

Hence this should help eliminate the 'queue' by presenting to the SSEP and CSNP only those onshore projects accommodated within the RESP. The overall objective should be to find the most cost-effective sites for development of distributed generation and energy storage taking into account development costs, achievable load factors, network implications, and the potential impact on agriculture (particularly arable). Environmental impact is a further important consideration, for example (for wind turbines) the degree of noise pollution and proximity to bird flight paths. It follows that generation and energy storage developers should also be included as sources of input to Table 2 in the consultation. Whilst recognising that wind, solar and BESS developers are in competition and will therefore be reluctant to share 'commercially confidential' information, it will nevertheless ultimately be in their interests to align their proposals with an agreed RESP which will include investment in upstream network capacity as necessary to facilitate connection and enable firm connection costs and timings to be quoted.

A further function of the RESP process should be to produce a temporal delivery plan that takes regional skills and supply chain requirements into account, as well as infrastructure planning and consents processes. Local government involvement is critical here in terms of planning approvals for new development, not only for energy infrastructure such as generation, energy storage and networks, but also transport, housing, I&C development, agriculture and land use.

**Technical Coordination** - Please refer to our comments on Technical Coordination in our response to question 5 above. In addition, we would add that to achieve regional and national coordination it will be important to track RESPs against credible future energy pathways that will deliver both grid decarbonisation and net-zero objectives. NGESO's 2024 FES considers three pathways which are consistent with the 'net zero by 2050' target (though not yet the 2030 grid decarbonisation goal). The requirement placed on NESO to now develop pathways for achieving decarbonisation of electric supply



by 2030 will be a further key input to RESPs, particularly in terms of any implications for accelerating solar PV and onshore wind generation development.

In that regard it will be important to ensure that the individual RESPs ultimately aggregate to a national grid decarbonisation and net zero strategic pathway. It follows that commitment by Government (informed by NESO) to a preferred national energy transition pathway will be an important input to the RESP process. For example, a pathway based on NGESO's FES24 'Hydrogen Evolution' scenario would have different consequences for RESPs than a pathway based on 'Electric Engagement'. Irrespective of which pathway is chosen (or evolves) it will be important to be adaptive to emerging challenges and opportunities.

**Q7 - Do you agree with the framework of standard data inputs for the RESP? Please provide your reasoning.**

We agree that inputs will be both top-down and bottom-up, and a key role of NESO as the hub will be to ensure optimum iteration across all regions to deliver both regional and national objectives as effectively and economically as practicable within the timeframes necessary to meet carbon budgets and ultimately the net zero by 2050 target. In terms of bottom-up inputs, whilst there will be regional variations in terms of materiality (albeit with an emphasis on future projections rather than current populations) we agree broadly with the range of RESP inputs suggested. This range of inputs has a read-across to the actors that need to be involved in the RESP process and represented on the Strategic Boards and/or Working Groups as per our response to question 11 below.

Of particular importance is the identification of major new demands (point loads or distributed) and proposed locations of distributed generation (typically wind and solar PV) and energy storage. In terms of major point loads, this would include (as appropriate for the region) proposed new data centres, transport hubs, and industrial cluster decarbonisation initiatives. An example of new distributed electrical demand is that arising from public EV charging infrastructure. This is an area currently lacking in national and regional coordination resulting in public EV charge points being disproportionately biased towards London and the South-East. This situation is not sustainable in the context of Government aspirations for banning sales of new petrol and diesel cars and vans by 2035 (or potentially earlier). The RESP process should include strategic planning and delivery of such infrastructure as is necessary to meet regional need whilst also coordinating with the Department for Transport (DfT) and the Office for Low Emission Vehicles (OLEV) regarding the requirements of EV charging infrastructure from a national perspective, including for example motorway service stations.

In terms of new generation and energy storage developments, these need to be both an input to and an output from the RESP process. As with public EV charging infrastructure, there is currently a lack of national and regional coordination, meaning that there can be little confidence that the optimum development sites, both from a national and regional perspective, are being prioritised. Given Government aspirations for doubling onshore wind generation and quadrupling solar PV investment, this should be a priority for regional energy strategic planning. In terms of an input to the RESP, the current 'queue' of largely speculative connection requests is largely meaningless. Instead, the sites earmarked for development should be an output of the RESP development process which should identify the optimum locations, again taking into account achievable load factors but also any economic, environmental, and societal factors. Such sites would ideally then be granted outline planning approval (subject to any required mitigation measures).

We agree that the RESP should reflect a holistic cross-sector view of a broad set of regional interdependencies which impact energy system planning, such as plans for heat networks, transport, housing, major new demands and generation, but also interdependent sectors such as water, telecoms and land use. In terms of inputs generally, whilst there are limitations in the consistency of inputs to current publications such as DNOs' DFESs and LTDSs, there is nevertheless much in these processes than can be usefully developed and refined as an input to RESPs.

**Q8 - Do you have any suggestions for criteria to assess the credibility of the inputs to the RESP?**

We would suggest that credibility of inputs is directly linked to the quality of evidence supporting any given projection of volumes or capacity. However, we also see credibility as an outcome of iteration between inputs and outputs of the RESP process, and between the RESP and SSEP (and CSNP). Proposed inputs must be justified by those ultimately responsible for investment and delivery (for example in new residential, commercial and industrial developments, new proposals for generation and energy storage, public EV charging infrastructure, etc.) provided where appropriate they are consistent with any specific Government targets (e.g. for new housing, solar PV and onshore wind). Equally, a holistic regional energy strategic planning process will give credibility to the economic and environmental business case, and ultimately the deliverability of these targets.

We note (and understand) Ofgem's view that the RESPs will not be an all-utility regional master plan. However, for the RESP framework to be effective it will be important, as part of the RESP process, to reconcile any barriers resulting from failure to manage inherent interdependencies between utilities (for example if digital telecommunications deficiencies were to limit the ability of energy networks to enhance network visibility or roll out 'smart' solutions). In the event that cross-utility coordination proves problematic, it will be important for NESO to have the means to initiate processes to achieve resolution.

**Q9 - Do you agree with the framework for local actor support? Please provide your reasoning.**

We agree with the place-based engagement principles of transparency, accountability, representation, and coordination. In terms of RESPs supporting local government energy planning, it is important to recognise that some Combined, County and Unitary authorities have made significant progress with LAEP methodologies. Their shared experience might be very helpful in the early stages of implementing RESP capability nationally. Whilst these 'first movers' have tended to be focused on mainly urban areas, it will be important to extend that capability to more rural areas, regions with significant transport hubs such as major shipping ports, and to major I&C hubs such as data centres and energy-intensive industrial complexes.

The inclusion of network company representatives on the Strategic Board is essential. Indeed, their inherent expertise in energy system modelling and infrastructure planning is a key attribute that the Board will need to call on. Academics, whilst providing helpful analytical capability, do not generally have the practical experience to undertake infrastructure planning. It will be important that key energy stakeholders operating in a competitive market are also able to be part of the strategic regional energy planning process – for example wind, solar PV farm and BESS developers, also charge point operators in respect of public EV charging infrastructure.

The composition of Working Groups and their interactions with the Strategic Board will need careful consideration to ensure actors are both adequately supported and empowered to provide a meaningful contribution to the RESP process.

**Q10 - Do you agree with the purpose of the Strategic Board? Please provide your reasoning.**

The nature of alignment between RESPs and the national SSEP and CSNP will be essentially iterative: i.e. ultimately converging towards an optimised national plan that maximises regional opportunities and solutions to challenges, whilst meeting national strategic energy objectives. In overseeing this process, it will be important for NESO to identify effective and well-developed approaches to regional whole energy system planning in order to share best practice across all Strategic Boards and Working Groups.

Whilst Ofgem proposes that RESP Strategic Boards should not have the final decision-making role in 'signing-off' the RESP, the responsibilities and accountabilities of board members must be clear in terms both of legitimacy and deliverability of the RESP. It will be important to overcome any concerns by some stakeholders (for example wind, solar and BESS developers who are operating in a competitive environment) over sharing of information. Such stakeholders will have a major impact on the quality and deliverability of RESPs, and ultimately the SSEP and CSNP. Hence their commercial interests will be ultimately best served through collaboration.

As stated in our response to question 5, the processes surrounding applications for network connections of onshore wind and solar PV farms and BESS, currently suffer from lack of coordination in that developers often present (largely speculative) connection requests with no consideration of their impact on the electricity distribution and transmission systems. A key opportunity for the RESP process is to coordinate regional wind, solar and BESS development in order to avoid issues with the current processes which prevent effective strategic planning of electricity systems, including a current notional queue already exceeding the anticipated national capacity requirement at 2050 by around 300% (depending on FES pathway).

SSEP, CSNP and RESP governance will need to balance commitment to a delivery plan with flexibility - being sufficiently committed to secure investment but also sufficiently responsive to opportunities to minimise risk of lock-in, and sufficiently agile to adapt to both regional and national needs. Understanding 'least regrets' commitments will therefore be important to reduce asset stranding risk, at least until the ultimate energy transition pathway for the region (or in some cases nationally) becomes clearer. This applies particularly to (green or blue) hydrogen production, transportation, and storage but also with regard to emergent transformative technologies such as small modular reactors. Each of these have the potential to fundamentally impact electricity volumes and power flows and hence system design and operation. In summary, given alternative credible pathways at both national and regional level, agility and adaptability must be at the heart of governance to maintain alignment between RESPs and an evolving national SSEP and CSNP.

The primary duty of Strategic Boards must be to ensure, with guidance from NESO, that these elements are embedded within the RESP process. Whilst Strategic Boards will comprise numerous actors, there is a need for clarity as to where ultimate accountability for delivering RESPs will lie.

**Q11. Do you agree that the Strategic Board should include representation from relevant democratic actors, network companies and wider cross-sector actors in each region?**

We agree with the proposal that the Strategic Boards should include local authority representation at tiers appropriate to the region (noting the crossover between RESP and local authority boundaries) and also energy network companies (again noting that geographical footprints of their licensed operating areas overlap RESP regions). We also recognise that Working Groups might naturally involve a wider range of actors than Strategic Boards. Albeit having a limited regional perspective, there might also be a role for trade bodies such as the ENA, Energy UK, and the Renewable Energy Association.

For the RESP process to be holistic, appropriate stakeholder representation on the Strategic Boards and Working Groups will be essential, including non-energy utilities, transport authorities and providers, businesses, and environmental bodies. However, those responsible for investing in and delivering energy-related infrastructure, such as onshore generation and energy storage developers, and public EV charge point operators, should also be represented at Working Group level, and we would extend that principle to telecommunications and digital services providers with which the energy system has a high and increasing mutual interdependency.

Comprehensive stakeholder engagement will be an important component of developing RESPs. This extends not only to energy and infrastructure providers but also those impacted by energy infrastructure decisions. Whilst planning reforms are designed to accelerate approval of energy infrastructure this will be effective only to the extent that landowners and tenants, and affected communities, are properly consulted and involved in decision making. In that regard there might be benefit in considering potential roles for the Country Land and Business Association (CLA) and the National Farmers' Union (NFU). We would also suggest a potential role for energy communities, which are active in numerous places, in providing input to regional energy planning. As well as directly delivering benefits to communities, energy community projects are also a good vehicle for raising the profile of energy decarbonisation from a wider perspective, making it more likely that local energy infrastructure projects will find acceptance. In terms of representation, bodies such as Community Energy England might make a useful contribution.

**Q12. How should actors (democratic, network, cross-sector) be best represented on the board? Please provide your reasoning, referring to each in turn.**

We recognise the concern to ensure Strategic Boards have effective representation whilst keeping the direct membership as lean as possible, and this challenge is enhanced by the fact that RESP boundaries overlap those of local authorities, energy network operators, and non-energy utilities. In terms of other stakeholders, there will be multiple bodies (some in a competitive relationship with each other) with an interest in developing energy related infrastructure such as onshore generation and public EV charging infrastructure.

It will be important to reconcile the understandable desire by actors and stakeholders to each have direct representation on Strategic Boards with the need to contain numbers at a manageable level, particularly when considering stakeholders who are in competition with each other, such as onshore generation and energy storage developers, and public EV charging infrastructure providers. The situation is not entirely unprecedented: for example, in some ENA forums, IDNOs are represented by a single member.

We believe the Integration of local spatial planning and energy system planning is a key deliverable of the RESP framework. Albeit it presents greater challenges in terms of ensuring fair representation, we therefore agree that the ‘embedded’ model is preferable to the ‘multi-stage’ model. The composition of Strategic Boards and Working Groups, and the relationship between them, will need further discussion, consultation and negotiation. We would not underestimate the challenge in bringing together the parties involved and reconciling potentially opposing views on the composition of their Strategic Boards and Working Groups. It will be important that all parties feel fairly and sufficiently represented.

Albeit operating over a smaller geographic scale than the proposed RESP regions, we would recommend discussion with Combined, Unitary, and Local Authorities that have already made significant headway in embracing the concept of regional and local area energy planning. Their experience will be invaluable in terms of understanding how to ensure effective governance and manage the working relationship between stakeholders. Amongst others, we would cite Oxford (Project LEO), Greater London Authority, Greater Manchester CA, and West Midlands CA as authorities that have led the way in developing LAEP principles, stakeholder buy-in, and effective governance.

**Q13. Do you agree with the adaptations proposed for Option 1? Please provide your reasoning.**

We note the rationale for adaptations to the original draft proposal which seems broadly logical, for example in terms of a smaller variation in populations between the RESP regions. Whichever of the two options (or any other option) is enacted it will inevitably continue to involve trade-offs, not least due to the non-coincident operational boundaries of local authorities and electricity and gas network companies within any given regional configuration. We note for example that option 1 better aligns with the DNO licensed operating areas in the North West (ENWL and SPEN Manweb) and the North East (Northern Powergrid’s two licensed operating areas). Nevertheless, there will still be considerable crossover. For example, the proposed Economic Heartland region covers parts of UKPN, NGED and SSEN electricity distribution networks, and parts of Cadent, SGN Southern England, and WWU gas distribution networks. Non-alignment between RESP boundaries and DNO licensed operating areas also means that DNOs will have representation on a number of Strategic Boards. For example, UKPN, NGED, and SSEN South will (presumably) each serve on four Strategic Boards. It also follows that DNOs will need to accommodate multiple RESP pathways in their overall network modelling and investment plans (and in both their DFESs and LTDSs).

Whilst an element of crossover will present some challenges, it should also have the benefit of helping overcome the current issue of energy infrastructure planning being effectively siloed due to network planning by DNOs (and GDNs) traditionally being geographically bounded by their licensed operating areas, not least due to lack of visibility of cross-area opportunities. Crossover might have the effect of improving coordination between DNOs and facilitating a more strategic consideration of higher voltage network development. For example, in some cases, relieving an emerging network constraint might more economically be achieved through building infrastructure to enable power flows to be transferred across DNO operating areas at distribution as well as at transmission level. Better coordination should also mean that DNO licensed operating areas would not necessarily limit options for supplying a given development (whether demand or generation related) in an adjacent DNO’s licensed operating area.

**Q14. Do you agree with our assessment that Option 1 is a better solution than Option 2? Please provide your reasoning.**

We note the rationale for favouring option 1 over option 2 and agree that option 1 appears to deliver some marginal benefits for the reasons outlined in the consultation. Wherever the RESP boundaries are drawn, this should not preclude cross-regional collaboration; nor must it present a barrier to coordination of energy-related developments that cross over regional boundaries, such as initiatives related to hydrogen production, transportation and storage infrastructure (similarly CCUS). For example, Project Union envisages a hydrogen backbone connecting industrial clusters around the country by 2030, initially connecting the Grangemouth, Teesside, and Humberside clusters, as well as linking up with Southampton, the North-West and South Wales clusters. Similarly, Hynet proposes a hydrogen network in the north-west that will extend to Manchester, Liverpool, Wrexham, and Flint. Whilst such initiatives might be overseen by NESO, they will also have an impact at regional, as well as national, level and will inevitably impinge on regional energy planning decisions.

In summary, RESP boundaries must be regarded as flexible and not act as a barrier to energy related infrastructure projects and initiatives which naturally transcend geographic boundaries.

**Q15. Do you agree a single region for Scotland is optimal? If you think a two-region solution is better, do you agree the split should occur at the SSEN and SPEN DNO boundary? If not, please provide your reasoning and alternative option(s).**

Specifically with regard to Scotland, whilst either a single or two-region model could be adopted, we believe there are benefits to adopting a two-region model. In terms of geographic, natural capital, and electricity network characteristic, the current SSEN and SPEN regions exhibit some significant differences. Opportunities for electricity generation and energy storage technologies will also differ, as may cross-vector opportunities. Moreover, the geographic scale of a single region for Scotland might prove difficult to manage logistically in terms of Strategic Board and Working Group representation.

From these perspectives, we believe there may be benefits to a two-region approach whereby each region can focus on their respective challenges and opportunities but not to the extent that it precludes cross-border interaction to ensure the development of an optimum energy strategy for Scotland as a whole. That being the case, and notwithstanding the need for greater cross-border collaboration, there is logic in aligning the two RESP regions and DNO licensed operating areas.