



Energy Networks Association
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Dear Sir/Madam

Open Networks Future Worlds consultation

This response to the Open Networks Future Worlds consultation has been prepared jointly by RenewableUK and Scottish Renewables in conjunction with our members. Our electricity system is going through profound change, with ever increasing levels of deployment of renewable and decentralised generation. We welcome the Open Networks project, which aims to understand how the electricity networks should respond to the challenges raised, and the future roles of the network and system operators.

Scottish Renewables is the voice of Scotland's renewable energy industry, working to grow the sector and sustain its position at the forefront of the global clean energy industry. We represent around 250 organisations working across the full range of renewable energy technologies in Scotland and around the world, from large suppliers, operators and manufacturers to small developers, installers and community groups, and companies right across the supply chain. RenewableUK is the trade and professional body for the wind, wave and tidal energy industries.

It promotes the deployment of clean energy in a smart energy system, increasing overall awareness of the UK's energy transition - from fossil fuels to renewable sources. Formed in 1978, and with more than 400 corporate member companies, our members employ a quarter of a million people and will invest more than £15.6bn in UK infrastructure between 2016 and 2021 – over 90% of which will flow to regions outside of London and the South East. In 2017, 28.8% of the UK's electricity was generated from renewable energy sources. 46% of this was generated by onshore and offshore wind, which provided 13.2% of the UK's electricity needs.

In responding to the consultation, we would like to draw your attention to the following points:

Separation of DNO and DSO roles

Throughout the consultation, there is a lack of full consideration of the DSO role, as distinct from the DNO role. The lack of consideration of these roles means that the modelling undertaken to date by the ENA cannot capture the full scale of actor interactions, complexity and future assessment may become abortive due to this oversight. We strongly recommend that the DNO and DSO roles are reconsidered within this SGAM analysis, and future assessment work, as separate roles.

Fundamental drivers for network flexibility

Although not the focus of this consultation, we have a fundamental concern about the definition of DNO system needs. The drivers for the DNO flexibility requirements should be better defined – particularly in relation to generation access to the network. The fundamental rights of network access for generation (and flexibility providers) need to be better captured to provide the

appropriate incentive signal to the DNOs regarding their own system capacity needs. Currently, 'flexibility providers' connected to distribution networks constrained by generation (export) are connected through ANM schemes. These schemes do not capture the system cost associated with the loss of network access for these providers – this is because there is no mechanism to incentivise the DNO to improve network access for these providers. This issue will increase in importance as further generation and network flexibility providers connect at distribution voltage levels.

Fundamentally we consider that the lack of clarity regarding distribution access rights for generation sites is likely to slow the transition to a full 'DSO' model and result in sub-optimal outcomes.

We note that it is possible that a review of access arrangements is not necessarily going to form part of the immediate actions undertaken through the Charging Future workstream – as it is not part of the 'narrow scope' going forward.

Local flexibility markets

We are also concerned that the development of flexibility markets may not succeed due to the lack of diverse pools of DER flexibility services at the local level. DNO networks are generally far less interconnected and more radial than transmission networks and cover much smaller geographical areas. Therefore, the risk of effective, competitive markets not developing is higher. There is no discussion within the consultation regarding which world is likely to deliver the most effective marketplace for distribution system services including the approach to testing the depth and resilience of local markets.

As ever, please do not hesitate to contact us if you have any questions.

Yours sincerely,



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Section 2: The Future Worlds

We have set out five potential Future Worlds. Do you believe these provide a reasonable spread of potential futures?

Notwithstanding our concerns regarding the definition of the DSO role and other concerns discussed below, we believe that the five Future Worlds defined by the ENA cover a reasonable range of high level potential future industry functional structures.

Nonetheless, we do not believe that the future market arrangements are likely to reflect exactly any one of the 'worlds' described in the consultation. It is likely the eventual regulatory market structure will be a derivative of at least two of the worlds.

Are there other areas of potential Future Worlds you would like us to consider to inform our thinking?

As presented in this consultation, it seems that the future worlds do not appear to take into consideration the interface between DNO and DSO functions. Ignoring this critical interface will lead to several significant issues for future assessment work:

- Misrepresentation of the different features between the worlds – potentially favouring some of the world options over others.
- Underestimate the potential complexity compared to the current business as usual arrangements.
- Influence the least regrets short term investment decisions, which may later result in stranded investment.
- Ignores the important differences in functions that exist between DNO and DSO.

We are also concerned that the future worlds do not actually model which world would deliver an effective marketplace for flexibility services. For example, the worlds do not account for any incentive or liability for non-delivery of service.

Do you have any key concerns with any of the Future Worlds we have set out?

Relevant to all 'worlds' discussed, the presence of DNO flexibility services and ESO flexibility services within the market is likely to undermine competition from third party flexibility providers. This could reduce market entry from network service providers, competition for network services and increase costs.

We see significant benefits for flexibility providers in relation to World C – largely in that the market can respond to price signals rather than relying on potentially ad-hoc tenders that the industry has little ability to anticipate or have forward visibility of. However, fundamentally we do not think that World C can deliver a safe and secure system, by itself. We agree that more evolved charging arrangements would likely result in less need to balancing services, but not likely to resolve it altogether. Sharpening pricing signals alone is not likely to be able to provide the required flexibility that will allow the networks to function. Given the current work being undertaken through Ofgem's Charging Futures workstream, we recommend that the future worlds must be viewed through the paradigm of the potential future charging arrangements, rather than as a distinct driver of flexibility services.

We are concerned that the 'status quo' has not been modelled and therefore difficult to understand the impact of the future worlds against the baseline assessment. We consider that it is important as

part of this assessment work to consider the relative merits of each world in the context of the current market arrangements, without a significant system operation role at distribution.

Regarding World E – the function of the Flexibility Coordinator is not clear, particularly how this role differs with the system operation functions at transmission and distribution. The role also has significant overlaps with aggregators and suppliers. We consider that there is likely to be unnecessary complexity and likely overlap of roles in this world with DNO/DSO and third party facilitator all present at this model.

Section 3: The Smart Grid Architecture Model

Is there anything missing from the SGAM methodology that have been implemented?

No comments.

How can SGAM modelling be used in further work to extract maximum value?

No comments.

What are the limitations of using the SGAM modelling for informing the Impact Assessment?

It is inappropriate for the ENA to request input of this nature without providing details of its own analysis of the SGAM methodology compared to the alternative analysis methods.

Nonetheless, we make the following observations about the SGAM methodology:

- The quantitative outputs from the modelling is extremely limited.
- The SGAM based impact assessment will not be able to capture effectively the impact on network customers.
- It is not clear if the impact assessment is going to be able to identify the potential cost of the future worlds in comparison to the business as usual situation.
- It cannot consider the potential impact of changing access and charging arrangements on the optimal market outcome.

Section 4: The principle of neutral market facilitation

How do you believe neutral market facilitation for SOs can be achieved?

We wholeheartedly support the principals of the neutral market facilitation role discussed in the consultation. However, we strongly object to the baseline assumption that the DSO functions will be performed by the DNOs – which is discussed at length in Section 4.3. The neutral market facilitation role can only be achieved through appropriate identification and separation of the DSO and DNO roles – and how they are distinctive from each other.

We are concerned that the DNOs will not have aligned drivers with the SO in the long run. The SO, in its enhanced role and legally separated from the other National Grid companies has clearer drivers to be able to plan an optimal system. However, the DNOs, as businesses with different funding and incentive arrangements from the NETSO, have a financial incentive to increase the overall volume of distribution assets and will not have the same incentive to adopt non-build options.

Therefore, we consider that there is a merit to model a DSO future where the system operation function at distribution is performed by a third party, distinct from the DNO companies, not incentivised to deliver a specific solution, but an optimised outcome. We believe that it is in the interests of both industry and consumers for Ofgem to deliberate on such a model which would address this potential market distortion.

Therefore, we are concerned that in all the worlds, the link between DSO and DNO is seemingly not drawn out as a specific interface. As represented by the charts in the consultation. We are concerned that this oversight will not effectively capture all of the potential links and complexities.

The separation of functions between DNO and DSO is not well captured through the documentation. There is no discussion throughout the documentation of how the DSO and the DNO might interface.

Further, we note that the function of independent distribution system operator (IDSO) and IDNO have been separated as distinct functions, but this has not been reflected in the DNO and DSO roles.

What are the possible conflicts of interest that SOs need to be aware of when facilitating the market?

The identification and resolution of the conflicts of interest that potentially exist through the DSO role need to be considered carefully by the network companies and Ofgem through analysis. External stakeholders cannot be expected to understand where those conflicts lie without analysis.

Nonetheless, there is a clear conflict of interest between the DNO and DSO actors in relation to the identification of optimal network solutions. DNO actors are likely to have flexibility assets (as shown in the future worlds diagrams presented in the consultation) within the marketplace. DNO actors are also likely to continue to be incentivised to increase investment in traditional network build solutions. Whilst the DSO actor role must be able to identify optimal network solutions without prejudice to build vs non-build. We consider that the risk of this conflict of interest is sufficient to require complete separation between the DNO and DSO roles as part of the SGAM analysis.

We note that Section 4 of the consultation does not include a description of the DNO owned resources 'actor', although it is shown in all the future world diagram descriptions.

What additional requirements would be appropriate to ensure the neutrality of SOs in facilitating the market?

No comments.

Section 5: Stakeholder insights

Which SGAM actor(s) best describes your future role(s)?

Our member organisations' activities relate most closely to the 'DER' and 'transmission connected generator' roles.

Do you have any thoughts on the insights gained on this role(s) in each of the Worlds?

The provision of national services (to the ESO) indirectly via the DSO (World A) or third party facilitator (World E) is likely to have a negative impact on DER participation in these markets. This is due to increased uncertainty ahead of implementation of a clear system operation role at distribution (likely at the start of RIIO-ED2), which will damage current efforts to move towards delivery of flexibility providers.

Further, DER access to the ESO national flexibility market will likely take longer or have more restrictive terms compared to services provided by other market participants that are able to contract directly with the ESO. Delay is likely to be introduced due to the additional process required between the DER/DSO (or third-party facilitator) then with the DSO (or third-party facilitator) /ESO – limiting the value opportunity for DER flexibility providers and introducing more uncertainty.

These issues are reversed under World D (ESO coordinates) when DER wishes to access local flexibility markets. However, this is likely to be less of an issue given that all flexibility providers, transmission connected or DER, would be required to contract in the same way (through the ESO). Further, the market for DSO services has not been fully tested and therefore the investor risk based on local flexibility market opportunities is unlikely to be significantly affected by this consideration.

Do you have any comments on the insights drawn on any of the other roles described?

We note that this chapter does not include a description of the DNO owned resources or the TO owned flexibility resources although it is included in the representation of all the future worlds. Their actor role needs to be considered as part of the assessment as it has significant potential to distort the market for flexibility services – as discussed above.

We note that the role of IDNO and TO is not expected to significantly change under the future worlds. Therefore, it is not clear why the DNO role is going to evolve (as distinct from the DSO role). Separate roles for DNO and DSO need to be described to properly understand the full suite of roles and interactions between each.

If you do not feel represented by any of the actors, how do you believe we should capture your role?

No comments.

Section 6: Assessing the Worlds

Do you agree with the proposed approach and timescales for delivering the assessment? Are there any improvements you would suggest?

Approach – there is not enough detail of the proposed assessment approach to be able to provide comment. Broadly we have no significant objection to the high-level description of the assessment approach described. However, we strongly recommend that the ENA consults separately on the detail of the assessment approach as the current level of information provided does not allow enough scrutiny from industry. We do not consider that the determination of the assessment criteria should be led by ENA’s consultants – these criteria should be developed and discussed with industry before commencement of the analysis. Similarly, we consider that it would be appropriate to consult on the analysis assumptions and data inputs.

Timescales – we consider that the impact assessment should not be undertaken until a detailed methodology and a clear set of assessment criteria has been communicated to industry and consulted on – with the outcomes reflected in the methodology. The current timeframes set out by the ENA in relation to the appointment of consultants and undertaking the impact assessment cannot possibly allow time for the ENA to consult with industry on the details of the assessment methodology. **We further note that the commencement of the assessment work is due to begin ahead of the closure of this consultation period, which we also consider is highly inappropriate.** The input from industry regarding the proposed future worlds cannot feasibly be taken into account as part of the assessment process going forward.

The assessment process, including the actual methodology for assessing each of the identified criteria, must be developed in detail and consulted on with industry. It is not clear how any of the criteria will be assessed, whether the assessment will be quantitative and qualitative and what evidence will be used to support the analysis of each. Otherwise, the ENA risks undertaking abortive analysis work and undermining the future recommendations from the project.

We do not see how this assessment can draw robust conclusions without a ‘world’ being developed to represent the status quo. Without this, the ‘worlds’ (or elements of the ‘worlds’) cannot be measured against the ‘business as usual’ scenario.

Do you agree with the proposed assessment criteria and allocation into cases? What further development would you suggest to the criteria (e.g. any additional criteria) or structure and content of the Impact Assessment?

No comments.

Is there any data you could provide or suggest we collect to support the assessment?

One of the most important aspects of the analysis is the implementation and operational cost models. There is no indication of what data will be used to support the analysis of these aspects.

As part of a consultation on detailed methodology for how each of the criteria will be measured, the exact datasets that will be used should be included and commented on by industry. We do not believe that it is appropriate for this to be led by ENA’s appointed consultants.

Do you believe that there are any tensions between different criteria and if so how should priority be built into the assessment?

There are significant interfaces between many of the criteria and the relative importance of each needs to be captured through the analysis. This should be developed as part of a detailed assessment process – which is consulted on with industry ahead of commencement of the assessment work.

Are there any functions/roles that need to be considered as a priority area for assessment?

No comments.

We are considering forming a sub-group to assist with the collation of data for the Impact Assessment; do you think this would be worthwhile and if so would you volunteer to be part of the sub-group?

Industry should be consulted regarding the sets of data to be used for the analysis. The data to be used for assessing each of the criteria should be captured as part of a more detailed assessment process.

Section 7: Key enablers for the future

This is the list of key enablers that we have identified:

- **Regulatory changes**
- **Organisational changes**
- **Communications infrastructure**
- **IT systems**
- **Network visibility and control**
- **Market engagement**
- **Contract requirements**
- **Funding.**

Are there more key enablers that we should be considering?

The discussion regarding information exchange and communications does not capture the interfaces between the DSO and the DNO. This is an extremely important interface that cannot be overlooked as part of future work.

Do you agree with our short-term investment priorities relating to the key enablers of:

- **communications,**
- **IT, and**
- **network visibility & control?**

Given our short-term priorities, what actions do you consider need to be taken now to address them?

The consultation does not include any discussion of short-term investment priorities – so we cannot comment on these.

However, we do agree that more detailed, more accurate and faster information will be required to allow effective SO activity to be undertaken across the distribution networks. However, the costs and benefits of these investments must be measured against the status quo to determine how to progress with future network strategy.

Considering the different DSO model Worlds that Workstream 3 has considered, do you think the key enablers differ materially between the Future Worlds?

The key enablers will impact different parties in very different ways depending on which ‘world’ is being considered. For example, under World A (‘DNO coordinates’) the funding arrangements are extremely important. However, under World D – the necessary changes to funding arrangements are likely to have a marginal impact on the DNOs.

Section 8: Proposed next steps

Do you agree with the proposed next steps?

We agree with the proposed approach for identifying the least regrets issues and we look forward to further consultation on this point. However, we believe that this should be taken forward on the basis of 'no regrets' with the actions taken forward restricted to items which overlap across all of the envisaged future worlds.

The Open Networks Project is prioritising areas of least regrets to deliver the benefits of a smart grid as soon as possible. Is there a specific activity within the functions that we have prioritised that you would like us to focus on for short-term delivery?

We believe that the definition of network services should be progressed as a no-regrets action for short-term delivery. This work should cover the description of the different network services types, definition of technical performance criteria for each service, contracting durations, payment terms and tendering cycles. This should be taken forward in the short term to ensure that there is a level of commonality of services across the distribution networks and is a no-regrets action as these definitions would be the same regardless of the contracting path and which party eventually performs the system operation role.

Is there any additional work that we need to undertake?

As part of the upcoming consultation on the areas of least regrets, the ENA should consider providing clear and robust justification for each of the least worst regrets areas that have been identified.

Amongst the list of least regrets areas provided in Figure 8-6, the area entitled 'procure and activate flexibility' does not appear to have a comment set of actors across all of the worlds. For example, the actors involved in the procurement of flexibility services under World A (DSO) is very different from other worlds, e.g. World E – third party facilitator. Therefore, industry requires clarity to understand why this area has been identified as a least regrets area.