REA Response to the Energy Security and Net Zero Select Committee: 'A Flexible Grid for the Future'

The Association for Renewable Energy & Clean Technologies (REA) is pleased to submit this response. The REA represents industry stakeholders from across the sector and includes dedicated member forums focused on solar, energy storage, green gas & hydrogen, biomass power, and energy from waste (including advanced conversion technologies). Our members include generators, project developers, heat 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.

Given the range of organisations the REA represents and our expertise, Dr Nina Skorupska, the REA Chief Executive or an REA policy expert would be happy to provide oral evidence to the committee during the inquiry.

Key messages:

- Grid capacity constraints remain a major barrier to the deployment of both renewable generation and energy storage assets which are critical to the delivery of a flexible grid for the future.
- The Committee should push the Government, Ofgem, National Grid ESO and Distribution Network Operators to implement the recommendations of the Electricity Networks Commissioner as a matter of urgency.
- The industry also supports the existing connection reform programmes being implemented by National Grid ESO and the ENA. These must result in earlier connection dates if they are to be a success.
- The committee should push for the establishment of the Future System Operator by calling for the royal assent of the Energy Bill, which is currently delayed in parliament.
- The government must also prioritise the delivery of deep flexibility markets, including supporting the deployment of long-duration energy storage.

REA Response

Grid capacity constraints are a major barrier to the deployment of renewables and energy storage assets, needed to decarbonise our electricity system.

Both the transmission and distribution grids currently face significant capacity constraints that are now the largest barrier to the deployment of low carbon generation and flexibility (such as energy storage), both of which are needed to deliver a secure, decarbonised, and affordable grid system by 2035, aligned with the Governments stated decarbonisation target. Much of the current state of the grid is due to a historic under-investment in grid reinforcement. This now needs to be pushed ahead by not only the Distribution Network Operators (DNOs) and National Grid ESO but also the regulator Ofgem who determines what levels of investments such organisations can make. In addition, the Government needs to prioritise and incentivise electricity grid reinforcement as critical to their energy security plans.

REA members regularly report significant grid connections delays, at both the transmission and distribution levels. Offered connection agreement dates are frequently more than 10 years in the future and are accompanied by requests for significant capital expenditure to help pay for local grid upgrades. [1] This creates an impossible position for renewable developers and financiers. More needs to be done to free up capacity on the grid. This includes prioritising the connection of energy storage assets to help mitigate capacity constraints, making the most of the existing infrastructure and reducing the overall level of grid reinforcement required.

Grid connection constraints equally impact the ability of developers to install new low-carbon demand as both households and businesses increasingly look to electrify their heat and transport needs. The connection of electric vehicles charging points and heat pumps are now also being held up by the grid connection queues. Recently, RECHARGE UK, the EV arm of the REA, highlighted that when emergency services and road freight are

reliant on charging infrastructure to fulfil their roles, charge points should be considered nationally significant infrastructure and be eligible for prioritisation in the connections queue [2]. The current delays are undermining potential economic growth in the UK [3] as well as the speed at which the country can decarbonise.

Members have also reported frustration with the service they receive from the distribution network operators (DNOs), often experiencing delays in applications being looked at, or applications being rejected for reasons that are unclear or do not make sense. The service provision between different DNOs does vary, with some performing significantly better than others, however, the lack of general standardisation in how applications are processed continues to drive confusion and delays.

It is recognised that much of this frustration stems from a significant skills gap, with DNOs and National Grid ESO appearing frequently under-resourced and finding it difficult to fulfil roles associated both with application processes and engineers to complete reinforcement works. A wider energy skills programme is needed to ensure both operators can hire the skills they need.

Delays are also caused at the interface between the distribution and transmission grid systems. Connections at the distribution level can be delayed by reinforcement requirements at the transmission level, requiring that to be done first. The current queue systems prioritise direct transmission connections, even where a significant level of cumulative capacity could be secured at the distribution level. The interface between the distribution and transmission grids needs to be reviewed so that generation and storage technologies of all sizes can progress.

The Electricity Networks Commissioner has highlighted the extent of the issue and industry support the recommendation put forward by his review.

The committee should be aware of the recent review completed by the government-appointed Electricity Networks Commissioner, Nick Winser, done in conjunction with the Energy System Catapult. The review highlights the complexity of the current grid connections process given the number of authorities involved, the growing skills gap, outdated planning rules and supply chain constraints. It highlights the need and possibility of reducing in halve the time needed for strategic transmission grid developments, to within seven years, from initial strategic planning to commissioning. [4]

A key focus of the report's recommendations is how to improve the coordination of strategic planning to speed up the decision-making process and ensure that new grid capacity can be built quickly. The establishment of the Future System Operator is central to this (see below). The REA has welcomed the report, stressing the need for the recommendations to be implemented quickly if the UK is to achieve its 2035 ambition of a fully decarbonised electricity grid.

The REA Support the existing work streams of National Grid ESO and The ENA to Reform the Connections Process.

These issues are starting to be addressed by both the Energy Networks Association (the trade body representing the DNOs) and the National Grid ESO Connection Reform Programs [5] [6]. Both are currently being implemented this summer. The REA are very supportive of these programs and have engaged with both organisations during their design, however, we stress that they must result in quickly bringing connection dates forward if they are to be considered a success by industry. Within both programs, key solutions being implemented include:

- An amnesty for projects currently in the connection queue that know they will not build out, allowing them to terminate their agreement without penalty to free up space.
- Reforming the treatment of energy storage assets in the connection queue. These changes will allow storage to connect quickly. Storage will allow us to make the most of existing grid infrastructure, reducing the amount of reinforcement required and allowing more generation and demand assets to connect.

- Reforming the queue management process to allow greater powers to the national Grid ESO and the DNOs to terminate connection agreements of projects that are not progressing.
- Developing non-firm connection offers, that remove the need for non-critical enabling works to be completed before an asset can connect.
- A wider review of the National Grid ESO connection reform process to ensure a more efficient connection process in the future.[7]

Establishment of the Future System Operator

The establishment of the Future System Operator (FSO) must be prioritised by the Government to create a centralised, independent body, that will be able to determine and direct the future development of the grid. The establishment of the FSO is currently delayed by the slow progress of the Energy Bill through Parliament, which once passed will establish the body in law. This Bill should be passed as a matter of urgency, before the end of the year, so that the FSO's work can get underway. The funding of the FSO must be ringfenced by the Government so that it can progress quickly and be assured of its operational costs.

It is important that such strategic thinking and design is divorced from commercial or political interests, with there being clear independence from National Grid ESO, ENA, DNOs, Ofgem or DES NZ. The body must also have suitable governance arrangements to ensure it can gather information from a wide range of stakeholders, of all sizes while being mandated to deliver a grid system aligned with the country's goal of a decarbonised power system by 2035 and a completely decarbonised energy system by 2050.

The REA support the recommendation of Nick Winser that the FSO should focus on the development of a 'Strategic Spatial Energy Plan' for Great Britain to ensure a coordinated approach to grid development.

Further areas of possible reform to grid processes

In addition to the above, the REA believe the following proposals could also help speed up the development of necessary grid infrastructure in the UK:

- Better data sharing of grid capacity constraints across DNOs. This data needs to be publicly available in a standardised format and kept up to date so that all developers have accurate information on where it is possible to develop new sites and connect to the grid.
- Development of an effective and speedy appeals process for grid connection decisions, so that developers have a route to appeal grid connection decisions that are based on inaccurate assumptions or data. Such a panel could be established as part of the FSO, which should be given powers to enforce such decisions.
- DNOs should be encouraged to maximise the performance of their existing infrastructure, including prioritising energy storage connections and being proactive with surplus generation from variable low carbon generation, seeing it effectively used in storage or auctioned.

Speeding up the Planning System for Grid Infrastructure Deployment

The planning system also needs reform to speed up decision-making on proposed grid development. The Energy National Policy Statements (NPS), which is supposed to guide planning authorities on the approval of grid infrastructure proposals, is recognised as out of date. Reforms to it were consulted on earlier in the year. [8]

However, there remains little available guidance on how grid infrastructure should be designed. Reviews of the NPS should address questions such as whether lines should be built overhead or underground, or where different forms of pylons should be used. Similarly, there is little guidance on how affected communities should be consulted, or compensated, for any local developments. This leaves local communities feeling unheard and can mean greater levels of resistance to development. Ultimately reform of the NPS must be aligned to the Strategic Spatial Energy Plan, to be developed by the FSO, and the UK's 2035 Net zero energy system target.

Outside of the guidance, there is also a resourcing issue within planning authorities. It is common for members to report it taking 12 months to have an application looked at, even before the process of getting permission is started. Planning authorities need to be better resourced to deal with the level of applications being considered. Central Government should look at how they can help address such resourcing constraints.

Locational Pricing

We recognise that the inquiry also considers whether regional or nodal pricing may also be appropriate to be introduced into the UK market. While there are differing views on the value of locational pricing across both REA members and wider industry, it is well agreed that this will not be a quick or easy market change and the Government must be sure of its benefits before proceeding with its implementation.

The REA recognise that zonal or nodal pricing could provide useful market signals, that could help direct the development of both generation and storage assets to areas of the country where they are most needed. This could help deliver flexible services and create savings on energy bills. However, delivery of locational pricing will need to be gradual, with transparent and clear price signals from the start. The possibility of an investment hiatus because of its introduction is a very serious concern that could further delay the energy transition. Overall, the industry remains concerned about the practicality of the delivery of locational pricing and the impact that it would have in complicating business models that in turn deter investment, which may undermine any benefits achieved.

In a recent report designed to inform the Government's Review of Electricity Market Arrangements (REMA), the REA concluded that there would be easier market interventions that should be prioritised before implementing locational pricing. This includes reforming the Contracts for Difference scheme to better reward flexibility and Firmness within generation contracts. This would provide stronger temporal price signals that will drive greater benefits to the grid in the immediate term.

Furthermore, it should be noted that given locational pricing is expected to operate through wholesale energy markets, the industry's ability to react to any pricing signal will be undermined if generation is still blocked by capacity constraints and physically unable to connect to the grid. As such addressing physical grid constraints, should be the priority. [9]

Developing Flexibility Markets

Beyond the Terms of Reference of the inquiry, the REA would also highlight the importance of the committee considering the ongoing development of a deep and transparent flexibility market within the energy system. Flexibility refers to the ability to shift energy in time and location to balance supply and demand for the decarbonisation of power, buildings, and transport. A flexible market ensures these services are appropriately rewarded, creating revenue streams for both renewable generation and energy storage assets that can respond to these price signals. In 2021 the Government published their '*Smart System and Flexibility Plan'* that is in the process of being implemented. Key actions that still need to be delivered in the development of this flexibility market include:

- Establishment of a support mechanism for the deployment of large-scale long-duration energy storage systems. The government has committed to delivering such a mechanism by 2024 but has yet to confirm its intentions or consult on the scheme design. Industry is very concerned by this delay. Long-duration energy storage is critical to delivering large-scale flexibility within a decarbonised grid.
- Introduce a VAT zero rate for domestic battery storage to ensure domestic installations have the same tax treatment as other energy-saving materials.
- Reform both the CfD and Capacity Markets to better reward low carbon flexibility within their contracts.

- Complete the implementation of the Government Energy Digitalisation strategy, which will ensure clear flexibility data and the development of flexible products.

Conclusion

The Committee should push the Government and grid operators to speed up the delivery of grid reform to enable the connection of increasing levels of low carbon generation and energy storage. Our physical grid systems must be reinforced so that new assets can connect quickly and the establishment of a flexible energy market is achieved.

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References

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