Energy Security and Net Zero Committee: A flexible Grid for the future

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Centrica plc
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Executive Summary

While Centrica is best known as the owner of British Gas, our Group brings together capabilities which support the UK and Ireland's energy security and will help the country reach net zero. Centrica is a uniquely integrated energy company built around three pillars that each compliment and add value to others: (i) retail businesses serving over 10 million customers; (ii) material gas and power infrastructure assets; and (iii) market leading optimisation capability.

We are proud to offer skilled, well-paid jobs for our 20,000 strong team - and we're growing, taking on a new apprentice for every day of this decade. Our customers benefit from zero carbon electricity supplied from our interest in the UK nuclear fleet, long-term power purchase agreements with renewable electricity generators, and £70bn worth of long-term gas supply contracts. Indeed, Centrica's wider strategy and capabilities centre on enabling a low carbon future.

We have recently announced a green-focussed growth and investment plan with capital investment building to £600-800m per annum by 2028. This will involve investing in a range of green assets, such as energy storage, solar, nuclear, smart meter assets, preparing for hydrogen and carbon storage, as well as investing in peaking plants to support the energy transition.

In our response to the Energy Security and Net Zero Committee's inquiry, we outline that the current grid connections process needs reforming. Although we agree with many of the recommendations by the Electricity Networks Commissioner, Nick Winser, on halving the time to deliver new transmission grid, these will take time to have an impact. We are of the view that radical reform of the grid connections process is the only way of achieving improvement in the short- and medium-term.

Our response provides solutions the Government could adopt to remove the barriers to grid connections. These solutions are focused around reducing the connections queue by removing stalled projects and tightening the rules on changes to projects that are yet to connect.

We also set out the rationale for our opposition to the introduction of locational marginal pricing, which we believe could reduce investment in net zero and would add risk to the delivery of the UK's net zero power system.

Committee Questions

1. **Does the current national and DNO grid deliver the capacity needed for the future and, if not, what are the solutions?**

    - The current national and DNO grid hasn't delivered the capacity needed for the future, mainly due to the current grid connections process which isn't fit for purpose. There are connection queues at national and DNO level that are clogged up with projects that are not progressing. By way of example, one of our commercial partners was given a connection date in the 2030s and we've received quotes of 10-15 years to connect 49MW or less solar projects. Our consumer benefits case currently builds these protracted timelines in and the benefits for consumers will therefore be accelerated if the changes to the connections regime are implemented without delay Our proposals to resolve this situation are:

        - Radical action to remove stalled projects from the queue to connect. These projects are blocking more viable schemes from entering construction and are causing the triggering of costly and potentially unnecessary network reinforcement works.

        - A use it or lose it principle (which is a feature in other regulated industries) and would result in the connection being revoked.

        - Tighten up the rules on changes to projects that are yet to connect changing technology e.g., changing a gas-fired combined cycle gas turbine to electricity battery storage. We believe that the ability for sites that are already connected to evolve is essential. However, where projects have a connection, but are not yet built, changing

the technology causes delays for projects that are ready to build. In cases such as these, projects should exit the queue and restart the process.

- Give network operators the power to remove defunct projects or those with overstated generation capacity based on their real-world performance over a number of years. This will create capacity, give an accurate picture of active generation and genuine projects on the networks and reduce the need for costly reinforcement projects. Ofgem is due to decide in September on an industry code change that would introduce queue management milestones to transmission connection agreements, allowing projects to be removed from the queue if they miss set project milestones. We support this change, but unless Ofgem decides to apply the milestones to existing projects in the queue, it will not have any immediate impact.

- We support National Grid ESO's plans to conduct a comprehensive reform of GB connections processes. This must be accelerated and take a whole network approach, capturing processes at Distributed Network Operator (DNO) level. Low-carbon generation connecting at distribution level must often sit in two separate queues – one to connect to the local network and the other waiting for transmission system reinforcement.

- As part of the acceptance of offers to connect, the developer must be able to show that they have access to sufficient funds to build the project. This is to prevent speculative projects blocking the path of projects that are ready to build.

- To ensure that only credible applicants submit their requests, they should be providing performance bonds or guarantees, and their creditworthiness should be assessed.

- The planning process should be amended for critical infrastructure such as new Grid Supply Points and Overhead Lines. The duration of these projects needs to be shortened considerably to enable projects to connect sooner. We broadly support the Electricity Networks Commissioner's recommendations in this area, including on community engagement.

- Allow the transmission networks to be proactive and make strategic investment ahead of need where there is a clear consumer or growth benefit. This would allow the network to be future proofed to support the connection of multiple projects in an area, ensuring the security of our energy supply, rather than the current reactive programmes which contributes to the piecemeal development of our system.

- Government should look at mechanisms to enable third parties to contribute to the cost of the energy infrastructure upgrades required (over and above payments required in their connection agreement) if this could accelerate network upgrades. In return the third parties should receive a guaranteed return of investment over a number of years to smooth out the burden on bill payers.

- We support the April 2023 implementation of Ofgem's Access Significant Code Review which is reducing the cost of most new distribution connections, many of which will be low carbon technologies. Alongside traditional reinforcement, DNOs must use their networks efficiently, maximising use of digitalisation and flexibility solutions to allow more decentralised technologies to connect as the system decarbonises.

2. Has the organisation of the National Grid proved a barrier to the installation of renewable energy sources, and if so what could be done to remedy this?

- Centrica primarily focuses on local projects that connect to the grid at distribution level. Therefore, we focus on the local transmission system rather than National Grid in our answer below.

- There are six DNO companies covering fourteen DNO areas, these companies have slightly different approaches to how they handle connections. Local renewable projects have suffered from DNOs not submitting requests to National Grid ESO for additional transmission capacity in a timely manner using the existing process known as project progression – this needs to be urgently reviewed to ensure that it's fit for purpose. Currently it's opaque and cumbersome. The review should sit alongside the same timeframe as the ESO's connections reform project.

- We also welcome Ofgem's acknowledgment of the importance of efficient connections for distributed generation in its recent open letter.

3. Should there be more innovation and devolution in the development of the Grid?

Innovation

- We support the use of innovation to find more efficient solutions to increasing capacity on the grid, this should lower costs for consumers as well as helping the deployment of renewables. Whilst networks are expected to lead innovation projects trialling new flexibility solutions (e.g. under the RIIO-2 Strategic Innovation Fund), business-as-usual implementation must be based on the flexibility being procured via open and transparent market-based mechanisms. To ensure neutrality, regulated network companies must not be allowed to use their regulated assets to provide such services.

- Ofgem's Customer Load Active System Services 'CLASS' decision in December 2022, which expressly permitted DNOs to use regulated sub-station assets to operate in commercial flexibility markets, went against the core principle of the liberalised energy markets that regulated monopoly networks should not compete against their network users in competitive markets.

- Where monopoly networks are allowed to compete against their network-users in competitive energy markets, it creates an inherent incentive for those networks to foreclose or frustrate market and network-access for those users. This conflict-of-interest is difficult to mitigate, which is why the regulated networks have traditionally been prohibited from participating in activities such as retail energy supply. Ofgem's decision on CLASS risks undermining regulatory certainty for future investments. The regulator has been unwilling on the back of that flawed decision to provide any clarity to assure investors that this will not occur again.

Devolution

- Ofgem has proposed the introduction of a regional system planner role that is likely to be assigned to the incoming FSO. If appropriately resourced, this could lead to more joined up development of the grid at a regional level. We would like to see investment in new grids happen in a timely manner, so the use of flexibility solutions could allow slight delays in physical reinforcements or could allow plants to come online quicker.

- We support regulated networks innovating to become more flexible, digitalised and automated, but this innovation must be used to encourage commercial investment in low-carbon flexibility and not to undermine it. As networks become smarter, further areas where DNO operations could conflict with the market may emerge so it's vital that Ofgem and Government provide investors with confidence that future decisions will ensure monopoly network operators act only as neutral enablers of markets. We are of the view that providing this certainty would help boost innovation.

4. What changes should be made to the planning system to enable it to increase the use of renewable energy?

- The Government has set a goal of up to 70GW of solar generation deployed by 2035 as part of its net zero objectives. Currently, UK solar capacity is approaching 15GW as of 2023. For Government to meet its objective, solar capacity will need to increase fivefold in the next decade.

- The grid connection challenge is hampering the Government's objectives in this space and therefore solar, other renewable technologies and supporting network infrastructure will require a more streamlined planning approval process. We urge the Government to consider expanding the definition of 'critical national priority' to include all net zero technologies and supporting infrastructure.

- We welcome the recent report by the Electricity Networks Commissioner, Nick Winser, on 'Accelerating electricity transmission network deployment'. Although the recommendations largely align with our wider asks around reducing connection times, the Government could go further. The steps the Government could take are highlighted above under question 1.

5. Is our planning system able to deliver more rapid development of new local infrastructure?

- We note that the Government has decided that in future the threshold measurement will exclusively be decided on by alternating current (AC), thereby ending the practice of using direct current (DC) to decide threshold capacity in solar generation sites. We believe this would prevent or significantly restrict the process of 'overplanting' to the detriment of the Government's decarbonisation, security of supply, and consumer affordability objectives.

- 'Overplanting' is the practice of installing extra solar panels to account for inefficiency and unreliability, and currently allows better optimisation of grid connections. It also provides a more stable output. To avoid losing this benefit, the Government could instead consider placing a cap on overplanting, so as not to exceed 30% or 40% overplanting.

- Should this decision be maintained, the proposal of moving from DC to AC threshold measurements would push several projects above the 50MW threshold for requiring a development consent order (DCO). We therefore suggest that changes are prospective only – i.e., only coming into force at a specified date and only applying to planning applications that are made from that point onwards. This should provide assurance that solar sites already in the planning process continue the route they have started, rather than starting again.

- In general, streamlining the overall DCO process would support faster realisation of net zero objectives.

6. Would regional, or nodal, pricing of energy facilitate a more flexible development of Grid infrastructure?

- At its heart UK energy policy still involves a trade-off between decarbonisation, affordability and security of supply. We believe that Locational Marginal Pricing (LMP) would add an unacceptable risk to the delivery of our net zero power system targets. To date, government policy has looked at wholesale and retail market policy on a very compartmentalised basis. There are numerous linkages and dependencies between the two markets and the assessment of LMP needs to consider the impact of any decision on wider markets.

- We understand that there is a theoretical case for introducing LMP. However, after carefully examining this option, we reached the conclusion that it is extremely complex, and we believe it would deter rather than encourage investment. In addition, we do not believe LMP is compatible with a p/kWh price cap, or with non-vertically integrated suppliers being able to compete in a sustainable energy retail market.

- On encouraging investment, we understand that advocates of LMP have suggested mitigating the adverse impact of LMP by grandfathering and continuing with the CfD, potentially by topping up from the nodal or zonal price to the strike price. We do not believe such a mitigation would improve locational or temporal signals for CfD plants. The main effect of LMP, plus a retained CfD for investment purposes, would be to further undermine the investment case for subsidy free renewables. The negative impact on subsidy free renewables would further increase demand for CfDs and/or other support, in order to get sufficient investment to meet our net zero targets.

- Currently, with a range of reform options on the table – including a spectrum within LMP itself – it is challenging to invest with confidence because future revenues are not predictable. Investors in merchant plants (a plant without government subsidy) are particularly affected because the national, zonal or nodal price would be the primary source of revenue, rather than a CfD top-up.

- We nonetheless agree with the Government that there is a case to strengthen locational investment and temporal dispatch signals for generation and demand in GB, particularly for generation that receives consumer support (currently the CfD). The starting point should be to incentivise CfD supported generators to behave more like merchant generators via another mechanism, such as a revenue cap and floor, or a simple grant.

- Instead of pursuing LMP, we believe that the Government should recognise the merits of the markets, incentives and protections that we already have and build on those. In particular, the potential of merchant renewables should be better appreciated, both in terms of delivering investment but also as a model for support mechanisms to be more exposed.

7. What can be usefully learned from power transmission systems in other countries?

- Power transmission systems in other countries face similar problems to the UK vis-à-vis delays in connecting new generation, including renewables to their networks. Looking at a range of connection regimes across European jurisdictions, none have successfully solved the problems.

- Within the UK, we believe lessons could be learned from the UK's offshore licencing regime managed by the North Sea Transition Authority (NSTA) which rigorously assesses the quality of applicants and progress to full project delivery. We think that the requirements for accepting applications to connect to the grid could be tightened to ensure only genuine, feasible project enter the connections queue. This could be done by requiring applicants to outline plans for project financing and provide appropriate evidence on their technical and financial capacity to progress the project.