

Hitachi ABB Power Grids response to Ofgem forward work programme 2021/22 consultation

Introducing Hitachi ABB Power Grids

Hitachi ABB Power Grids (HAPG) is an exciting new global joint venture founded on two iconic companies with a ground-breaking heritage of innovation in pioneering technologies. As a global technology leader, we serve the energy, industrial, mobility, IT and smart cities sectors. We are a major investor in the UK, with a turnover of £500 million.

We are committed to powering good for a sustainable energy future. Our aim is to bring affordable, clean energy and sustainable living to the world to make it fit for future generations. In the UK, we are already helping to bring clean energy to 4.5 million homes by connecting the world's largest offshore windfarm at Dogger Bank to the grid, and we were recently confirmed as the supplier for Europe's first multi-terminal HVDC interconnection, linking Shetland to the UK transmission system for the first time.

Meanwhile, our Phoenix Project, in partnership with SP Energy Networks, University of Strathclyde and the Technical University of Denmark, has received funding from Ofgem's Network Innovation Competition and is seeking to find alternative sources of system inertia that are essential to stabilise the future network.

We strongly believe that the UK can lead the world in creating a secure, net zero-ready energy system through a stronger, smarter, greener grid.

Our feedback

Ofgem's strategic vision

We believe that retaining a high reliability network should be a core part of Ofgem's strategic vision. This is something that consumers have become used to, but especially through the energy transition it should not be taken for granted. For decades, we have had a system where generation follows demand. Transitioning to a system where demand follows intermittent generation will present a multitude of challenges to the reliability of the network. Essentially, ensuring the lights stay on is the most fundamental priority for the network companies and we believe Ofgem's goals at the outset need to reflect this.

We would also like to see more clarity on how supply chain businesses like ours can be part of the solution in meeting Ofgem's objectives over the coming year. It is clear that energy companies cannot face the mammoth task of delivering a completely new way of running the network alone and need companies like ours to align around bringing new ways of thinking and delivering innovative solutions.

Finally, given the broad scope of Ofgem's overall vision, we believe it would be helpful to have some clarity on some of the detailed targets that Ofgem can measure progress against.

Point 1: Ofgem's new strategic framework

We believe Ofgem's priorities need to be considered in a new light; particularly in the wake of the pandemic, the protection of society has taken on new prominence. Defining the best interests of the consumer needs to go beyond the pounds and pence cost to consumers and start encapsulating the protection of the environment in a broader sense. Beyond decarbonisation, this may include challenges such as bringing offshore wind into heavily congested coastal areas; and appreciating that doing so in the most environmentally sensitive way will not necessarily be the lowest cost way.

We think the five strategic change programmes represent a good set of objectives and filling in the detail behind them at pace is going to be an important part of delivering. We would highlight the fourth programme, concerning data and digitalisation, as an area where benefits have traditionally been underplayed (see feedback on point 7 below).

Point 2: core regulatory functions

We believe that the existing codes and licensing, for example on voltage tolerance limits, are overly restrictive and backwards facing. The codes need to have a greater focus on the adoption of power electronics. Resilience is currently delivered through asset redundancy, but in the future, it will be achieved through asset intelligence. Power electronics will be critical to that and will become ubiquitous across the network, meaning the reliability of the power electronic devices becomes paramount. The codes and standards held by the Energy Networks Association need to be updated to meet this challenge – a certain level of deregulation may be advisable to free new technologies from existing restrictions and allow the market to find its own balance. Currently the codes are acting as a barrier to supporting dynamic networks.

Point 4: low carbon infrastructure

We believe Ofgem is focussing on the appropriate areas in terms of low carbon infrastructure and the aims for 2025. Our only comment would be that speed is paramount; there is a lot of uncertainty and we need to progress this as quickly as possible. As mentioned earlier, having an active supply chain will help to solve problems and bring forward innovations more quickly. Certainty of long term policy is also essential for the investment in R&D to come forward at the level and pace required. Regarding RIIO, the mechanism of re-openers needs to be nimble and allow anticipatory investment.

However, we shouldn't depend completely upon new innovations to deliver the carbon savings we need. Investment in existing technologies needs to be accelerated to achieve net zero as a way of hedging against the effectiveness and workability of future technologies like hydrogen and CCUS.

In addition, there will need to be a change in the way that interconnectors are regulated. Interconnectors as we know them are only part of the future energy landscape. We should ensure that regulation does not stop multi-purpose interconnectors (e.g. those used to serve offshore and move energy to another country) being put into place.

Point 5: full chain flexibility

We agree with the focus areas.

Regarding storage, the big concern has traditionally been about distribution companies owning storage and being able to game supply and demand. However, the real benefit of storage is supporting grid stability, voltage support, and fault level support. It is important not to forget about the role it can play.

Point 7: data and digitalisation

We agree with the desired outcomes of this strategic change programme, however we feel that they are overly focussed on managing some of the negatives (e.g. regulation of data monopolies) of data use, when, in our experience, some companies are not really using data effectively at all. We believe there should be a more balanced approach and that energy companies need to be encouraged to make the investments in digitalisation in order to make use of the positive benefits that there are, and we should eliminate barriers to investment.

The IT and OT systems that the regulated companies currently operate today have been underinvested for so long that they are not fit for tomorrow's demands and requirements. And this is not just a problem of underinvestment in the physical infrastructure; regulated companies are also lacking the people and talent required (e.g. data scientists).

DNOs have voiced to us their concerns about how few innovations have been successfully delivered and converted into regular business use. New technologies or approaches need to be fully embedded before they can be viewed as business as usual and therefore lose innovation funding. Given distribution and transmission companies have become the fundamental facilitators of net zero, Ofgem should explore how to strike a balanced approach between License Obligations, where clear ambitious outputs can be defined, and incentives to reward 'above and beyond' performance. It is important to retain an incentive to encourage the right investments in smart data systems and better infrastructure and ensure that the regulated companies have an equitable return from that.

We believe that Ofgem should be more prescriptive on the outputs it wants to see; in this case, on the level of digitalisation needed by the end of this price control period. Digitalisation and data analysis are key enablers of decarbonisation, improved asset management and lowest cost reliable capacity – so setting clear digital strategies is vital to success. Presently, there is no end target for the industry to coalesce around – Ofgem should set one.

Point 9: transforming Ofgem

It is important that Ofgem works effectively and has the knowledge base to understand the shifting energy landscape and technologies that will create beneficial opportunities. Companies like ours are keen to partner with Ofgem and share knowledge to ensure that decisions are evidence-based and responsive to changes happening across the industry.