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techUK Response to Ofgem' Open Letter
Future reform to the electricity connections process

16 June 2023

techUK and its members would like to thank the Office of Gas and Electricity Markets (Ofgem) for inviting us to respond to the open letter on future reforms to electricity connections. We agree that there needs to be a clear vision for electricity connections so the grid can manage both the demand for connections for new, low carbon sources of supply as well as the increase in no-and-low carbon demand arising from mass electrification of infrastructure and transport systems, future compute needs, and the digital services required for the UK to become a tech and science superpower.

techUK is the trade association for the UK tech sector representing over 950 companies and more than 700,000 employees in the UK. techUK seeks to ensure that people, companies, and organisations can realise the positive outcomes of digital technology for the UK economy and society.

The view techUK members is that the grid needs to be upgraded and modernised, and that all sectors need reliable, affordable, and scalable access to decarbonised electricity. Furthermore, it is in our member companies' view that decarbonisation of the electricity grid and delivering on economic opportunities will not be possible without digitalisation of the whole system at pace.

Digital tech can reduce greenhouse gas emissions by up to 20% if deployed in heavy emitting sectors, as well as reduce demand and energy bills in many industries. However, getting access to power has held back some key digital infrastructure projects and the associated potential delays to opportunities for UK economic growth need to be considered by Ofgem as they review regulatory options.

It is highlighted by the Pro-innovation Regulation of Technologies Review: Digital Technologies review chaired by Sir Patrick Vallance that stakeholders report major constraints in accessing grid connections for generation and there is estimated to be up to 320GW of capacity currently in the queue for a connection. A primary reason is the existing connections process, which has not kept pace with technology. The connection process was designed 20 years ago at a time when connection applications were made by a small

number of large fossil fuel generators; it was not designed for the volume of applications we see today across a variety of smaller low-carbon generation technologies.

It is also the case that connections are dealt with on a first-come-first-served basis, with no mechanism for prioritising strategically important investments. The approach taken by individual Distribution Network Operators (DNOs) can lead to regulatory fragmentation across the UK, and we also note that some projects in the queue are more likely to go ahead than others, with companies potentially submitting multiple applications for similar projects. Which understandably creates extra pressure and administrative burdens on DNOs.

We welcome Ofgem's main objective to see electricity connection offers with shorter average connection dates for both generation and demand side connections which better meet customers' needs and enable a timely transition to net zero. This has been identified as a significant challenge by techUK's members, and we therefore are keen to provide the sector's feedback on Ofgem's proposed objective, outcomes and guiding principles, as well as the potential reform stages.

To inform our response techUK held a workshop on 1 June and a consultation exercise with members interested in energy reforms and we're pleased to share in this letter some of our observations, recommendations and barriers that need to be overcome. You can see our reflections of how the current system impacts the tech sector below, along with proposed recommendations.

Headline points from techUK members

- **Ofgem can use initiative to drive collaboration**: techUK and members would welcome Ofgem having a role in terms of driving collaboration between the main parties (ESO, Transmission Owners, DNOs, Ofgem, DESNZ, and other relevant stakeholders) and then working collaboratively with those parties to overcome any barriers that might exist and regulation. Although the many parties share a common vision of reduced connection times and a more efficient process, should progress stall Ofgem must step in and take leadership.

- **Near-term:** Given the pressing near term challenges, techUK urges Ofgem to consider that business investment is also on the demand side of this problem, not just on the generation side of this problem, and both those things are interconnected. To achieve net zero and improve connection queues, it is imperative to consider the demand side of the problems as well as the generation or supply side of the problems that exist for the connection queue.

- **Prioritisation:** Ofgem should consider prioritisation in the queue, and to consider how they determine viability and timing of projects, or end users and whether an applicant is indeed an end user. This is because, anecdotally, there have been connection applications for which the amount of land and the scale of the connection application don't match up (as well as the so-called "zombie" connections, where projects do not stall due to reasonable evidence on planning permissions, but due to lack of screening; nevertheless, these applications remain in the queue, with capacity allocated that could be re-assigned to accelerate connection of other projects).

- **Co-ordination is important:** Currently there seem to be several initiatives (ESO, National Grid, Ofgem, DESNZ, DNOs), so members are keen to ensure these are coordinated, bodies work collaboratively and so initiatives are reinforcing each other rather than conflicting. **Call for transparency where needed:** For example, a lot of the work is happening in the Energy Network Association's Strategic Connection Group, with little input from stakeholders, as well as their 3-step plan to speed up connections has been published but the detail behind this has not been shared. Transparency and coordination must be prioritised.

    - *Suggestion – Where possible Ofgem could be driving this collaboration through an agreed governance mechanism with all parties.*

    - *Suggestion – coordination to an extend with Local Authorities, Environment Agencies, Consumer bodies (as and where relevant) may prove efficient to unblock any barriers and/ or enable faster clearance in cases of transmission/ distribution infrastructure build.*

Key issues facing the tech sector with the current connection framework

- **Slow grid connection times:** Ofgem and National Grid ESO have already identified the need for reforming grid connection times, processes, and investment. Industries seeking to build new infrastructure are restricted due to connection constraints and long queues. Over 40% (120GW) of all new generation capacity holding transmission connection agreements today have connection dates of 2030 or beyond, this is also true of some demand side connections in congested areas (London) – with the impacts of these issues cascading down into the distribution network.

- **Far away grid connections inhibiting science and tech investment:** The UK is not only striving for an electricity infrastructure that supports delivering Net zero through electrification of energy, heat, and transport, but also to become a science and tech superpower. To attract investment, we must address with immediacy how we design and operate the electricity system and recognise the role digital tech (such as machine learning, AI, quantum computing, and digital twins) must play in maintaining reliable access to electricity and delivering the energy transition affordably.

- **The current system is hindering EV rollout:** With surface transport accounting for 22% of emissions, and EV charging rollout behind the curve, Ofgem should hasten the time taken to connect charge points. Members are reporting waiting times of 6 months to 3 years for their premises chargers to secure access to electricity. Therefore, techUK urges Government and regulators for the need of an industrial strategy for depot (large scale industrial/workplace) charging and HGVs.

- **Data centres are not being built:** Data centres are required for the entire range of digital services essential to the UK's future economic success. In order to meet the ever growing demand for digital services, data centres purchase power (often renewable) ahead of build. Delays to connection impact the commissioning of the data centres and have commercial implications when the energy cannot be taken. Over half of generation customers in the transmission queue today have a connection offer date at least 5 years in the future, with over 10% due to wait 10

years or more. This trend is continuing, with 70% of recent applicants (offered in the last 12 months) receiving connection dates 5 or more years away and over a quarter receiving connection dates beyond 2032 – some beyond 2037. This means having a data centre facility developed, ready to operate, without the appropriate power connection promised in their connection agreements.

The techUK position on the vision for future energy

- Government must commit to increasing the incentives to boost business investment for green and zero carbon technologies, as well as committing to funding and investment into electricity infrastructure, including accelerating plans to digitalise the energy grid.

- We need a vision for a net zero future for UK infrastructure. This has been part of the Government's strategy for some time, but there is a need for a strong vision and direction on outputs. There are policy inter-dependencies that can lead to complexity, a lack of clarity or lack of coherence that increases the perceived risk for investors, delaying progress.
    - *We and our members believe that we need a sequenced roadmap/ vision for net zero for providing right investment signals to the market.*

- A sea change here is essential to fulfil the Government's objectives of becoming a science and technology superpower. To attract and keep innovative firms we need:

    - Reliable, affordable zero carbon electricity, recognising that intermittent renewable generation (wind/solar) alone cannot meet the UK's energy demand. Some form of zero carbon base load generation is also required.

    - Fast and flexible connection across the UK.

    - More data centres using a combination of cheap renewable and base load zero carbon power to provide data infrastructure to the innovative companies.

    - Infrastructure for electrified mobility making decarbonised electricity accessible.

Solutions and recommendations for Ofgem

- **The grid should fully and rapidly digitalise:** The grid needs to fully utilise digital and data to manage demand, lower bills, and be ready for future applications and use cases.

- **Create a comprehensive sequenced roadmap (strategy) for the delivery of a decarbonised, resilient, power system by 2030 - 2035:** That roadmap will signal to the market what is expected and should include a coherent policy approach across energy and energy efficiency, heat, transport, and buildings.

- **Accelerate digitalisation and transparency of supply:** Quick adoption of digital technology can reduce greenhouse gas emissions by up to 20% by 2050 in the three highest-emitting sectors: energy, mobility, and materials, according to the World Economic Forum. Data transparency, digital talent and partnerships are critical for companies to rapidly adopt the technologies and realise their net zero ambitions faster.

- **Digitalisation at the heart of system design by the Future System Operator (FSO):** The FSO will have an important coordinating role. It must embrace digitalisation by design from the start in design of the energy system.

- **Co-ordination must be prioritised across key actors and sectors**.

Case Study – techUK data centre operator member

The restriction in availability of additional power to the London area is severely restricting many businesses across many sectors.

For VIRTUS Data Centres a combination of lack of immediate power combined with delays in future power is preventing us from growing our business within the Southeast of England via the addition of new sites. These facilities would result in investments of approximately £0.5 bn, over the next few years and would create hundreds of skilled and non-skilled jobs in the region, directly with VIRTUS, our contractors and our customers. It is further preventing the region from reaping the benefits from future technological advancements in areas such as artificial intelligence (AI), an area in which the UK wishes to become the global the Centre of Excellence.

Yesterday marked the start of the 2023 London Tech Week, with Prime Minister Rishi Sunak making a keynote speech. Sunak commented on the potential for AI to improve education, creating the potential for decreased workloads among teachers (IBT).

We can further see as a wider issue that the restriction in power and further delays to new power could prevent a further approximately £5.5bn of investment in Data Centres alone in the next few years, along with the associated employment and career opportunities.

Peter Betts, Engineering Director at Virtus Data Centres

We hope this response can be the basis of further and sustained engagement, techUK, as the representatives of the UK tech sector, believes wholeheartedly that digital technology will be crucial to delivering a decarbonised grid, lowering bills, and improving energy efficiency, so look forward to working with Ofgem and the energy sector to further digitalise the energy system.

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About techUK

techUK is the UK's leading technology membership organisation, with more than 900 members spread across the UK. We are a network that enables our members to learn from each other and grow in a way which contributes to the country both socially and economically.

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