

Unite response to the Public Accounts Committee Clean Power 2030: Upgrading the Grid Inquiry



1. Introduction

- 1.1 This submission is made by Unite, the UK's largest trade union with over one million members across all sectors of the economy, including manufacturing, financial services, transport, food, agriculture, construction, energy, utilities, information technology, service industries, health, local government and the not-for-profit sector. Unite also organises in the community, enabling those who are not in employment to be part of our union.
- 1.2 Of particular interest to this inquiry, Unite represents almost 40,000 Energy and Utilities workers, including the frontline engineers working to maintain the power distribution network throughout Great Britain and Ireland.
- 1.3 Unite's core focus is ensuring that proposals for grid enhancement and connection reforms do not disrupt the fundamental requirement for UK energy security. The grid must retain capacity to support the substantial electrical requirements of daily life and economic activity: electrically heated homes, vehicle electrification, manufacturing, commercial transactions, and the rapid expansion of data centres driving the digital AI revolution. Meeting the 2050 net-zero target requires viable alternatives to natural gas boilers, whether through hydrogen¹, heat pumps, or other electrical heating systems, all of which demand a resilient grid infrastructure.
- 1.4 Government statistics show *"between November 2024 and June 2025, contracted demand in the connection queue increased from 41 GW to 125 GW. Of this, around 73 GW are data centres"*². While the National Energy System Operator's (NESO) focus on removing speculative, non-viable projects from the queue is commendable, it does not resolve the structural deficit. The UK urgently requires more engineering teams to deploy physical infrastructure and ensure power is efficiently routed from generation sources to demand centres. The counterproductive practice of paying Scottish windfarms to shut down due to transmission constraints, while simultaneously paying fossil-fuel generators in the South to meet peak demand, must be ended.
- 1.5 Furthermore, the planning permission process for nationally significant infrastructure must be accelerated. Grid expansion is routinely delayed by protracted disputes with landowners over pylon placement and local objections regarding visual impact. Public opposition must be balanced against the broader reality: a minor visual compromise via pylons is a small price to pay compared to the ecological and economic devastation of unmitigated climate change.
- 1.6 Unite maintains that concentrating generation capacity in isolated regions and relying on long-distance transmission lines is inherently inefficient due to significant electrical

¹ If the Industry can overcome the numerous issues with the technology that including how to safely burn 100% hydrogen without producing oxides of nitrogen (NOx), huge amounts of water vapour, that could lead to damp, diffusion through pipe walls, hydrogen embrittlement, increased risk of explosions and the need to double the diameter of all pipes or quadruple the pressure.

² See the Ofgem's Curate – Demand for Connections Reform Consultation

losses, particularly across underground or subsea cables³. Demand should ideally be balanced by expanding localized generation and distribution capacity within the same geographical regions.

- 1.7 Given the immense strain data centres place on the network, they must not be permitted to jump the connection queue. Instead, they should pay a premium for grid access to cover supply costs and incentivise self-generation, thereby minimizing their broader impact on capacity.
- 1.8 Finally, Unite reiterates its demand for a Just Transition⁴. Workers currently employed in carbon-intensive sectors under threat of closure, such as natural gas-fired power stations, facing the 2035 decarbonisation deadline, these must be transitioned into secure, alternative employment that guarantees an equivalent or improved standard of living.
- 1.9 Frameworks like Centrica's plans to decarbonise prior to combustion represent a way to avoid closures, preserve capacity yet remove carbon are type of strategic industrial planning solutions required.

2 Responses to Specific Inquiry Questions

- Do DESNZ, Ofgem and NESO have the information, powers and accountability frameworks in place to ensure delivery of grid upgrades at the pace needed?

- 2.1 Unite does not believe these three agencies possess the necessary powers to force through critical delivery milestones. Specifically, they lack the enforcement mechanisms required to accelerate the deployment of physical power lines⁵, mandate distributed generation or aggressively expand training pipelines for engineers. They have also failed to address the systemic financial extraction of wealth from players like National Grid, whose debt burden is now more than double that of Thames Water⁶.
- 2.2 The current backlog in grid connectivity is severely exacerbated by a failure to recruit and retain the skilled workforce needed to maintain the network and expand generation

³ Cables produce a magnetic field whenever you pass a current through them. Placing the Alternating Current (AC) cables in the ground causes the magnetic field of the cables to more strongly react with the minerals in the surface resulting in the loss of an alternating current signal as is drowned out by resonating magnetic fields that create signals of their own in the cables with noise. This can be overcome by sending a DC supply down the wires, but doing that increases the losses due to resistivity of the cables and subsequent heating of cables and equipment. Interconnector cables use a DC supply but introduce power supply booster circuits every so often to reduce losses.

⁴ Along the lines laid out by the United Nations (UN) [International Labour Organisation \(ILO\)](#) as deployed when the [Uniper's Radcliff-on-Sour coal fired station closed](#).

⁵ Due to the planning regime

⁶ According to the annual return submitted on 31/03/2026 total debt currently stands at £42.82 billion, yet it was allowed to pay out 16.35 pence per share on 13/01/2026 and 32.14 pence a share on 23/07/2026 in dividends to each of its 4,975,878,083 ordinary shareholders despite being a national asset, making it far harder to renationalise. While having a revenue of £17.687 billion in the 2025/26 financial year. In addition, Eastern Power Networks £7.419 billion in debt, National Grid Distribution stated it is £7.236 billion in debt, UK Power Networks is £7.1 billion in debt, Sothorn Electric Power Distribution is £5,556 billion in debt etc.

In contrast Thames Water is has £19.28 billion in debt with the entire water industry last reported debt mountain exceeding £95 billion!

and storage capacity. Because domestic capacity has languished, the UK has relied heavily since 2020 on energy imported from European neighbours at a significant premium.

- 2.3 If the massive connection demands of data centres are granted without structural upgrades, the UK risks widespread blackouts, and international interconnectors will operate at absolute capacity. Unite recommends that grid connections be stringently prioritised for energy supply and storage assets over new, low-carbon consumption requests. Speculative applications clog the system, deter genuine investment, and reduce overall delivery capacity. Projects must demonstrate a tangible prospect of progressing to actual construction before being evaluated for grid access, and developers must provide viable alternative backup solutions should a grid connection fail to deliver.
- 2.4 Crucially, the current operational model—where high-voltage jointers and specialized engineers routinely work 16-hour days—is completely unsustainable and poses severe health and safety risks.

- How should costs, risks and benefits be shared between consumers, developers and government?

- 2.5 It is entirely equitable to levy higher fees on high-energy, commercial consumers like data centres rather than penalising essential sectors. The financial burden of grid upgrades must not be passed onto manufacturing, transport electrification, food production, or domestic heating and cooking needs.
- 2.6 Ofgem's proposals regarding Internal Rate of Return (IRR) discount calculations for data centres are fundamentally flawed because they focus strictly on financial metrics rather than the social and economic value a project brings to local communities.
- 2.7 Project approvals should favour developments that offer tangible social value, provide direct community assistance, create local employment, mitigate fuel poverty, and actively reduce the regional carbon footprint. Evaluating investments solely on returns for corporate shareholders ignores the intrinsic value of community-aligned infrastructure. Levies should be structured so that big business pays its fair share to offset the burdens placed on neighbouring communities.

- Q3. What reforms would have the greatest impact on accelerating delivery while maintaining public consent?

- 2.8 The most effective way to accelerate infrastructure delivery is to urgently address the workforce deficit. Trade union interventions have been required to fight regressive employer proposals suggesting that fatigued engineering staff cope with gruelling 16-hour shifts by taking "20-minute power naps" after 12 hours, in their vans and drinking energy drinks⁷. While the Health and Safety Executive (HSE) tracks workplace incidents, it fails to capture the number of road accidents, injuries, and fatalities caused by exhausted utility workers driving home after extended shifts. The industry aggressive

⁷ 24 and even 36 hour plus shifts are not uncommon in emergency situations.

pushes for faster connections without a corresponding investment in skilled personnel is directly compromising worker safety.

- 2.9 Public consent for grid upgrades cannot be sustained while energy companies engage in profiteering from global crises. To build public trust and mitigate opposition to infrastructure like pylons, revenues must be aggressively redirected into:
- Expanding training to increase the number of qualified, frontline engineering staff.
 - Funding comprehensive home insulation schemes.
 - Further subsidising domestic solar installations, battery storage, and heat pumps.
 - Expanding the public EV charging network.
 - And importantly delivering direct reductions in consumer energy bills.

3 Conclusion

- 3.1 The UK's grid connection delays are a direct consequence of a long-term failure to invest in both physical infrastructure and the skilled workforce required to build it. Forcing a depleted workforce to maintain the system through excessive overtime puts lives at risk on our roads and sites. This dangerous practice cannot continue simply to mask systemic capacity shortages and connection queues.
- 3.2 Unite believe the solution to this situation is to plug the leak of profits to shareholders through public ownership and pump these profits into investment. If the government front loads the money, for worker training and grid improvements, the nation can enjoy the rewards, in the form of lower bills and faster connections for investors. In that way sustainable solutions to our current grid connection queue problems can be resolved far swifter than the current 15 years for some bid applications.
- 3.3 The UK must maintain robust, reliable baseline generation capacity to secure the grid when intermittent renewables drop due to low wind or heavy cloud cover. High-demand users, particularly data centres, must remain lower in the queue until overall supply safely exceeds national demand.
- 3.4 A reliance on international markets leaves the UK highly vulnerable to external price shocks and supply restrictions, as European nations will naturally prioritise their own domestic consumers during crises. The UK has already skirted the edge of rolling blackouts in London due to a lack of domestic generation, avoiding disaster only by paying exorbitant premiums to release power from a battery storage facility in Belgium.
- 3.5 The legacy of underinvestment left by the previous administration has left the UK's energy architecture severely exposed. Much like the crises allowed to develop across hospitals, school infrastructure, and the water sector—where debt and corporate profiteering went unchecked—the energy sector has been left structurally weakened. Correcting the inefficient allocation of generation, such as the failure to transmit Scottish wind power to southern demand centres, must be prioritized alongside localized generation to minimize transmission losses.
- 3.6 Data centres require uncompromised, continuous power bounds to function; a drop below operational thresholds causes systemic failure. Because they represent a massive, unrelenting drain on the network, regulators must mandate that these facilities mitigate their own grid impact. Their power draw fluctuates significantly based on computational complexity and CPU core utilization, meaning the grid requires immediate, substantial buffer capacity to absorb or deliver power instantaneously. Ofgem and NESO

must defer data centre connections until the UK possesses a stable, built-out surplus capable of absorbing this volatility.

- 3.7 If technological demand continues to follow Moore's Law⁸, processing power and its corresponding energy demands will expand exponentially. Until the UK achieves long-term energy abundance—potentially through commercial nuclear fusion—available capacity must be strictly managed. The public expectation that grid capacity is infinite and instantly accessible is a dangerous misconception. The UK remains heavily dependent on energy imports, exposed to international profiteering, and constrained by a severely limited workforce.
- 3.8 Workforce shortages present an acute operational risk. When a major named storm causes widespread transmission failures, a depleted engineering workforce means homes, hospitals, and businesses could face outages lasting over a week or more, incurring billions in economic damage⁹. As climate change escalates, the frequency and severity of extreme weather events, the recruitment and training of frontline staff must be accelerated immediately.
- 3.9 Finally, while NESO and Ofgem must reform the queue to eliminate speculative commercial ventures, no regulatory mechanism will succeed without substantial, sustained investment in the specialized workforce required to make the UK network operational, secure, and sustainable for the future.

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⁸ While raw speed and power scaling hit limits, energy efficiency became the new benchmark, tracked by [Koomey's Law](#). Coined in 2010 and named for Stanford professor Jonathan Koomey, Koomey's Law describes a trend in the number of computations per joule of dissipated energy. This number doubled every 18 months from 1945 to 2000 (100x per decade), then slowed, doubling every 2.6 years or so since (16x per decade). But as [Moore's Law](#) is also doubling the number of transistors on a chip and hence computations every 18 - 24 months it results in an evolutionary trend where the energy demands increase every year in parallel with the power of the servers, eventually leading to a scenario where data centres dominate energy demands far beyond our capacity to deliver their needs.

⁹ Currently the teams from around the country converge on the area from the industry not just the National Grid, but the more people, the faster the work is completed, the smaller the cost both economically and to life.