

Written evidence submitted by Heathrow Airport

Enabling sustainable electrification of the UK economy

Dear Environmental Audit Committee Members,

Thank you for providing the opportunity to respond to and engage with the Environmental Audit Committee's call for evidence on enabling sustainable electrification of the UK economy.

Aviation is an essential lifeline for the UK – for economic growth, for connectivity, for trade and for wider societal benefits. Delivering net-zero is vital for aviation's future so the sector must play its role in helping the UK and global economy to decarbonise and reach net-zero aviation emissions by 2050 at the latest. Within this goal, renewable electricity underpins our efforts to decarbonise and therefore sustainable electrification of the UK economy is critical.

The supply of reliable, renewable electricity is a critical part of the UK's journey to net-zero. Upgrading the UK's electricity transmission and distribution system is crucial to achieving net zero and Government have a critical role in ensuring the transmission and distribution network can supply the growth in renewable electricity that Heathrow and West London will need to decarbonise in order to enable the UK's net zero transition more broadly.

Heathrow's changing energy profile:

The UK aviation sector has committed to achieve net-zero by 2050, as part of the UK's Jet Zero Strategy. To achieve net-zero aviation on the ground will require the electrification of buildings, infrastructure and vehicles and Heathrow has already begun planning and investing in this transition. The move to an airport largely run-on electricity will need a UK electricity transmission and distribution system that has the capacity and resilience to cope with the significant increase in electrical demand that will be created across West London, and the speed at which that growth will emerge during this decade and beyond. We perceive some challenges with the capability of the current electricity transmission and distribution system to deliver net zero and have raised with Government in various engagements and consultation responses about the need for more resilience and reinforcement of the electricity grid to allow the scale-up of new net-zero infrastructure, such as electric vehicle charging fleets.

To provide a sense of scale, Heathrow's current electricity demand is likely to double over the next decade to enable the transition to an electric operational vehicle fleet, a zero-carbon heating system for our terminals and buildings, and more extensive use of pre-conditioned air systems, which provide conditioned air to aircraft on stand allowing them to turn off their on-board auxiliary power units (APUs). Furthermore, the expected uptake of zero emission aircraft could require up to ten-times current electricity by 2050 to liquify the hydrogen required to meet demand, which is most likely to power the next generation of aircraft. As an airport, we know that alongside our ongoing commitment to energy efficiency, we will need significantly more power in the future and we are aware of existing capacity constraints in the UK's transmission and distribution network – as well as long waiting times for upgrades and connections that in some cases stretch to 15 years. This is considered a particular challenge for West London, with the Greater London Authority warning that it may take over

a decade to bulk up grid capacity and suggestions that the electricity distribution network has already run out of capacity.

The key concern for Heathrow and many large energy consumers across the UK is securing enough renewable electricity in a timely manner to deliver net zero and maintaining a reliable and resilient supply. In West London, we are aware there is little spare capacity available, and it has recently been elucidated how long it will take to get new connections. There are a variety of players with a role in rectifying the electricity network constraints include Government, consumers, suppliers, and energy producers and network operators, but there is risk that solutions won't arrive quickly enough. Appropriate action is required now to prevent these constraints slowing progress on decarbonisation.

The role of Government

Government have made considerable progress thus far with their energy strategies and projects, including the British Energy Security Strategy, Powering Up Britain, and proposed revisions to the NPS on energy infrastructure. However, this can only be the start, and key measures to meet the increasing demand on electricity are critical, including ensuring that there is a supply of increasing renewable energy in the UK, sufficient energy exists in the system and robust and scaled infrastructure is mobilised to deliver the increased energy demands to all parts of the UK, including Heathrow as our energy profile changes with our transition to net-zero.

DESNZ must take a leading role to ensure alignment and strategic direction on energy policies across Government. This includes governance and influencing Ofgem as the regulator, National Grid as the body responsible for reinforcing the high-voltage (HV) lines, and the Distribution Network Operator (DNO) to deliver locally in West London. It is also important that DESNZ ensure that Ofgem is a world-class regulator, supporting the consumer and ensuring that the regulator has sufficient oversight on the increase in electricity supply and grid connection needed, and therefore has future-proofed regulation and accountability for private companies.

It is critical that the right planning, policy, and incentive framework exists by Government to deliver resilience on the transmission and distribution network, but also that a combination of short- and long- term solutions are in place and communicated to industry and the public on how to unlock the perceived years of delays to deliver sufficient electricity. DESNZ must also ensure that Ofgem, DNOs and National Grid have a net zero remit as key facets of the UK system delivering wider economy-wide targets, as part of their governance, alongside the overarching Government principles to deliver wider ambitions of trade, economic growth, and international competitiveness. There is a clear need for Government investment to future proof our energy system for net-zero, in line with the UK's net-zero priorities – but there is a challenge that the infrastructure change will need to align with the UK regions and nations and involves many stakeholders.

Pace and speed of reinforcing the energy system

Across the economy, there are concerns that proposed changes to the electricity transmission and distribution network and broader electricity system are not moving at the pace required to provide for future net zero energy requirements. Recently, Devon Council reported that there is a 10 – 15 year wait time before their solar energy farm would be

connected to the National Grid due to bottlenecks in the system. This is problematic for Heathrow Airport and the aviation sector, given our net zero transition will require a significant increase in electricity demand as outlined above.

Whilst we welcome Government measures and overall strategic policies that have been designed to deliver ambitious decarbonisation targets for the UK power system by 2035 and the UK's goal to be a net zero economy by 2050 and endorse these messages, it is critical that Government consider what tangible policy measures and actions are required to deliver these targets. Government must engage with industry to understand our specific demands, particularly those that are critical to the UK's economic growth and prosperity, and those at the end of a supply chain with limited control such as airports and aviation. A large growth in Heathrow's electricity demand will come by 2030 linked to delivering our net-zero plan, so there is a need for efficient delivery from Government to support the capacity on the transmission and distribution network and a need for urgent action from Government, in collaboration with consumers and providers.

We acknowledge that for the UK to deliver bold ambitions around decarbonisation, the scale of supply will need to be significant multiples of what we as the consumer use at present and there is an urgent need for Government to ensure there is enough renewable electricity in the system and a sufficient distribution system to transport energy across the UK. We perceive that this could require a significant increase in capacity on the transmission and distribution structures with the potential for infrastructure change and encourage Government to engage with the energy supplier and construction firms to ensure that the planning process supports the necessary changes.

We encourage the EAC to work with Government to ensure that the UK's electricity system can respond to the net zero transition and enable the decarbonisation plans of organisations and sectors that are banking on a growing supply of renewable electricity being available to replace fossil fuels. For Heathrow, delivery of our net zero plan will require a ramp up in electricity demand before 2030 and growth beyond to and we want to work closely with Government and other stakeholders to provide clarity and certainty that the UK's electricity system will be able to deliver the growth that Heathrow and other organisations will rely on and ensures UK PLC can remain competitive and deliver against economy wide net-zero targets.

Best regards,

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