NON-TECHNICAL SUMMARY

Equinix (UK) Ltd operates a data centre on the Powergate Business Park in North West London (the Site).

The data centre comprises two warehouse style buildings containing the data storage equipment and ancillary equipment designed to provide power in the event of the external power supply failing. The back-up power supply is multiple diesel-fuelled generators for each data storage building.

The main commercial activity of the data centres is data storage, however according to the Environmental Permitting (England and Wales) Regulations 2016 (as amended) the activity that requires a Permit is combustion of diesel in an appliance(s) with an aggregated thermal input of more than 50 megawatts (MWth), though the individual generators which are generally around 5-7 MWth.

Diesel generators are considered to be the best available technique for the purpose of emergency generation. A review of operating techniques and the potential effects on the environment are included in this application.

As a result of the use of diesel generators, the most likely potential impact from the data centre operations is to air quality. An air dispersion model was prepared to assess the impact of the Site's emissions to air.

For human health, compliance with short-term particulate matter (PM_{10}) and nitrogen dioxide (NO_2) standards as well as long-term NO_2 standard were assessed. The Site uses ultra-low-sulphur diesel. Despite this, emission rates for sulphur dioxide (SO_2) for the engines were still calculated and were found to be exceptionally small (of the order of 1×10^{-3} g/s) and as a result have not been assessed.

The maintenance regime of all the engines on the Site was studied and it was found that only the hourly NO_2 standard has the potential to be exceeded, but that the probability of this happening is highly unlikely. The likelihood of exceedance is significantly less than 1%.

An emergency power generation scenario with all the Site's generators running at the same time for an hour was also assessed. In this case, the resulting Process Contribution would be above the Air Quality Standard (AQS) for 1 hour NO_2, noting that 19 exceedances are permissible before the AQS is deemed to be exceeded. The emergency power generation has never been used since the opening of building PG1 in 2008 and building PG2 in 2012. The data centre has two dual substation connection and uninterruptable power supply (UPS) to buffer short term fluctuations. As a result, the likelihood of emergency running is extremely low.

It was also found that the particulate emissions from the engines do not have the potential to breach the air quality standard for PM_{10}, whether in emergency running or testing mode.

For ecological receptors, compliance with short-term oxides of nitrogen (NO_x) standards as well as the long-term NO_x standard, nitrogen deposition and acid deposition critical loads were assessed. The Site uses ultra-low-sulphur diesel. Despite this, emission rates of SO_2 from the engines were still calculated and were found to be exceptionally small (of the order of 1×10^{-3} g/s) and as a result have not been assessed.

The maintenance regime of all the engines on the Site was studied and it was found that only the 24-hour NO_x standard has the potential to be exceeded at one 25m x 25m square of a local wildlife site. The probability of this happening is highly unlikely as it is significantly less than 1%.

An emergency power generation scenario with all the Site's generators running at the same time for an hour was also assessed. In this case, the 24-hour NO_x standard has the potential to be exceeded at two local wildlife sites, however as discussed above the Site has never operated in emergency power generation mode and therefore the likelihood of emergency running is extremely low.

All fuel oil tanks are installed above ground in appropriate containment.

There are no material emissions to watercourse, sewer or groundwater, and waste generation on the Site is minimal.