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FOR WHAT COMES NEXT

Data Centre Emergency Back-up Generating Plant
MCPD
Position Statement, October 2021

Data centres are highly resilient facilities that underpin our modern economy by processing, storing and transacting digital data and, with communications networks, form our core digital infrastructure[i]. Besides underpinning all online activity, data centres enable retailers and banks to process financial payments, supermarkets to resupply, delivery companies to manage logistics and public authorities to deliver services and messaging. Some sites are officially deemed CNI (critical national infrastructure) to reflect the nature of the activity being managed therein. UK Government's policy ambitions for growth and recovery rely on world-class data infrastructure both at national and local level.

Data centres run on electricity but most facilities maintain standby capacity in the form of diesel generators to provide continuous power in the event of an emergency like grid supply failure or a drop in frequency[1]. Computer servers are vulnerable to even the shortest perturbations in supply. Larger sites typically have dual feeds to the grid to minimise risk from local supply disruption. Diesel generators are the default solution because they can provide the highest concentration of power in the shortest time, and reserve fuel supplies can be stored safely on site.

We estimate that there are perhaps 500 data centres in the UK that are, or will soon be, obliged under MCPD. Currently only new plant, installed since December 2018, is required to meet the requirements but by 2029 all plant will be covered. In the UK MCPD is a significantly more complex piece of legislation than elsewhere in Europe, largely because it has to accommodate the intention to "regulate out" generator farms that were contracting to provide market capacity by using multiple diesel engines that individually were below regulatory thresholds but collectively could significantly affect local air quality.

On the whole, data centre operators have successfully navigated all this complexity but two issues have emerged that are adding unnecessary burdens to the compliance process without delivering any policy outcome.

These are the requirement to monitor CO and, to date, a refusal to permit generators ahead of the due date. The following notes address each in turn.

CO Monitoring Requirements

MCPD requires that CO is monitored within four months of a new installation and then at intervals of five years or 1,500 running hours. We understand that the obligation to monitor CO was bolted on to the Directive at the last minute following political pressure, but is unsupported by justification or evidence. The requirement was proposed so that the EU could gather data which in turn would allow them to decide whether further action was needed on CO.

[1] See: Emergency Generation in Data Centres, 2017 https://www.techuk.org/asset/B99C277D-7933-4C90-8EF0CBCD3B49B520/

We take the view that this requirement is spurious and, now that the UK has left the EU, it could be dropped without compromising policy outcomes in any way. In support of our position, we make the following observations:

- Machines are often pre-tested by manufacturers so relevant information may already be available without the need for costly testing on site.

- The UK regulator is unlikely to have an intended purpose for any data collected

- The generators would presumably need to be run on load and at temperature, which could mean they have to be fired up specifically just to monitor CO. Some operators could accommodate this in test routines when they do run on load but coordinating this may be contingent on availability of external contractors.

- Generator exhausts would need to be retrofitted with ports which is a non trivial exercise requiring impact performance and exhaust gas leak risk assessments by specialist contractors. Moreover, a safe inspection "man-platform" would need erecting so that a probe can be inserted manually into the exhaust gases. If generators could easily and cheaply be pre-fitted with inspection ports this would help, but the infrastructure needed to ensure safe inspection would still have to be provided.

- Older generators tend to have more varied flue types which may pose additional safe access challenges or constraints.

- Operators estimate that costs per generator will run well into thousands, plus annual maintenance requirements, which seems disproportionate to the outcome.

- CO levels will vary due to factors like load and temperature, which may result in unhelpful data that is hard to compare.

We also note that proposals to add NOx monitoring under MCPD are being aired. These should be abandoned for the same reasons cited above.

Early Permitting

When operators are installing new plant on sites these machines need MCPD permits. It makes good operational sense and in terms of best practice, to add existing gensets to that permit to provide transparency and certainty and to avoid delays in permitting in the likely event of last minute delays as the deadlines approach. These applications have been refused – or more specifically, existing generators have been stripped off the new permits, although the full fees have been retained. The legislation requires that permits are obtained by the relevant deadline and there is nothing to prevent operators obtaining permits in advance of these dates.

Our position is that operators should be allowed to permit plant in advance if they so wish. In support of our view we make the following observations:

- When new generators are installed, existing generators can be added to the same permit, so the reporting record is complete from an early stage. From a regulatory perspective the EA would have better insight in terms of generator stocks and location.

- By requiring separate applications the compliance and cost burden is being raised unnecessarily for operators. This will presumably also increase the burden on regulatory teams who have to process two permit applications instead of one.

- There is likely to be very high demand for permits for existing plant as the deadline approaches, so operators are taking sensible precautions applying well ahead, so as not to be in breach of requirements by the due date. We are seeing very long response times in other permitting processes which is not inspiring confidence among operators that there will be adequate resource in place within the relevant EA teams when the time comes.

- Advance permitting will ensure that generator performance is reviewed early and any remedial maintenance can be carried out proactively instead of reactively.

- MCP must be monitored and reported within 4 months of permit receipt and then at least every 3 years thereafter (subject to the terms of the MCPD permit). With a staged approach the third-party resources can be coordinated more easily, thus preventing inflated costs and problems accessing resource at peak times. This is not farming where crop cycles dictate demand, so we should avoid unnecessary demand peaks rather than creating them by an inflexible approach.

- In terms of air quality, advance permitting would allow the regulator to develop better intelligence on the condition and performance of our generating stock.

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[i] **What is digital infrastructure?**

Our core digital infrastructure is not a single system but multiple systems and networks that interoperate. The three main constituents are fixed line telecommunications (made up of the high capacity and highly resilient core network plus the access network that runs from the exchanges to tens of millions of individual customer premises), mobile telecommunications (that interact with the core network but provide customer coverage through a cellular network) and data centres (that manage, transmit, process and store data for government, businesses, individuals and academia).