Consultation on Reforms to tax treatment of Red Diesel
techUK response: Data Centres

Introduction

techUK is the UK trade body for the digital technology sector and we represent the UK's data centre sector, characterised more recently as Data Infrastructure.

Data centres receive, process, manage, store and transmit digital data and comprise part of our core digital infrastructure. Every time we read a post on Facebook, order our shopping from Sainsbury's, get directions for a journey, download a film, send an email or check the weather forecast, data centres are involved. Behind that, of course, it is data centres that enable supermarkets to resupply, retailers and banks to process payments, delivery companies to manage logistics and government to deliver services. It was data centres that kept businesses running remotely and allowed government to communicate during the first COVID-19 lockdown.

Data centres underpin an internet economy that contributes over 16% of domestic output, 10% of employment and 24% of total UK exports and provides the technical infrastructure for financial services, aerospace, transport, healthcare, research, retail and utilities. Each new data centre contributes between £397 M and £436 M GVA per year to the UK economy while that of each existing data centre is estimated to lie between £291 M and £320 M per annum[1]. Data centres are the physical manifestation of our digital economy: the internet does not float in a cloud but sits securely in servers. We cannot lead connected lives without data centres.

Embedded generation in data centres

Data centres are characterised by significant embedded emergency generating capacity (aggregating to perhaps 3GW nationally) combined with extremely low generating activity. This capacity takes the form of diesel plant usually combined with batteries: batteries provide instantaneous supply for a short period (usually about 30 seconds) while the generators fire up[2]. This emergency supply is deployed only in the event of grid failure, which fortunately is rare. Even with regular testing, these generators are unlikely to run more than 12 hours a year.

Data centres need emergency generating capacity because they house ICT equipment that cannot tolerate interruptions in electricity supply or fluctuations in frequency. Data centres are usually required to maintain sufficient fuel on site to support continuous operation for between 36 and 72 hours, depending on the resilience rating of the site and customer service level agreements. Data centres therefore maintain substantial diesel stocks. Tanks must remain permanently topped up. If no grid outage occurs this fuel would last for many years. Fuel is polished regularly but this process extracts fuel, filters it and restores it to the existing tank using a closed loop system. The smallest

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[1] See https://www.digitalrealty.com/data-economy

[2] See Emergency Generation in Data Centres:
https://www.techuk.org/images/techUK_TechCttee_Briefing_Emergency_Generation_1701.pdf

site we are aware of holds 27,000 litres on a permanent basis and another site reports 250,000 litres[3]. Other, larger scale sites will hold significantly more so in aggregate, at national level, the quantity of fuel currently being stored is in the tens of millions of litres[4]. The use of red diesel is widespread within the sector.

Comments on the proposals
With the context outlined above in mind, we have some comments on the proposals. We appreciate the policy objective; that a higher price for diesel in sectors where perverse outcomes are unlikely should drive better energy stewardship and investment in more efficient equipment. We do not object in principle to proposals that limit eligibility for red diesel and operators do not, in principle, object to a requirement to purchase white diesel in future, although they note that this will add an unwelcome and unavoidable operational cost burden. Customer contracts are multi-year and most extend well beyond 2022; additional costs like these cannot therefore be accommodated in existing contracts so they directly impact the bottom line.

However, the key issue for data centre operators is that the proposals outlaw the *use* of red diesel after 31 March 2022, as opposed to its *purchase*. As a result we take issue with the policy as set out and draw attention to a number of serious practical difficulties that these proposals, as currently worded, present to the data infrastructure sector, and, presumably, to other sectors operating emergency plant (like hospitals). These issues are summed up as follows:

1. **Resilience:** Data centres maintain large stocks of diesel on site and must maintain these in anticipation of a grid outage of some kind. Storage tanks cannot be run down because this would compromise the resilience of the site and place operators in breach of service level agreements and other contractual arrangements involving third party business continuity. This would also put them at risk of non-compliance with availability standards and other similar obligations. Each time a tank is taken offline, it compromises the resilience of that site. Temporary generating capacity would have to be installed, fuelled and tested. Infrastructure upgrades would have to be carried out to enable this temporary plant to be connected and operational. This is a non-trivial undertaking involving an unwelcome degree of risk for operators and customers.

2. **Environmental impacts and practicalities:** a large data centre may store 250,000 litres on site, and to comply with the proposals, even if operators have diluted stocks with white diesel in anticipation of the regulation, these tanks will have to be emptied. That involves a fleet of tankers to move the fuel, somewhere to receive it that can provide guarantees that it will be destined for legitimate secondary use, and another fleet of tankers to replace the fuel with white diesel. This activity would be multiplied hundreds of times across the UK.

3. **Policy outcomes:** the policy objectives are to encourage investment in more efficient equipment by raising the price of fuel. In the case of emergency generation for data centres,

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[3] For example, one of our sites has 78,000 litres of gasoil stored on site and uses 1200 litres a year. If there are no grid outages during that period then this site has to dispose of 78,000 litres of red or part red diesel by the end of March 2022.

[4] Working the other way, we can approximately aggregate stocks: a conservative guestimate suggests the presence of, say, 1500 generators averaging 2MW, capable of consuming perhaps 450l of gasoil an hour under load. Sufficient fuel stock for 2 days (say 50 hours approx.) suggests that nationally we have something in the region of 35 million litres of gasoil in tanks, of which only a small proportion is likely to be consumed by 2022.

the embedded cost of the generating plant far outstrips fuel costs so operators will never be anywhere near that tipping point. Moreover, generators are run minimally anyway, so fluctuations in fuel price will have no impact: they must be tested and they must power the site if the electricity fails. If the potential for stockpiling ahead of the deadline is a concern for policy makers, then some reassurance can be drawn from the fact that very low throughput minimises scope for advance purchasing of this type: the reality is that the tanks are already full.

In the light of these we request that the use of existing stock of red diesel is not prohibited from March 2022. Many other legislative instruments make provision for emergency generating plant and such an approach may be appropriate in this case.

If you need more information or clarification on emergency generation in data centres or would like to discuss amendments to the proposals that could accommodate these practical issues, then please do not hesitate to get in touch and we can facilitate a dialogue or round table with technical experts and operational staff from the sector.

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- For more on our data centre programme see: https://www.techuk.org/focus/programmes/data-centres

- For an overview of the UK data centre market see: UK Sector Overview 2020: The most important industry you've never heard of: https://www.techuk.org/insights/reports/item/18557-uk-data-centre-sector-overview-2020

- Data centre programme overviews, 2019 overview and 2020 Q1 overview

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