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Email:
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Dear Les,

Initial Representation Mods 498 and 502

The increase in carbon dioxide proposed in Modifications 498 and 502 will have a detrimental effect on 1. operators of gas turbines used for power generation due to increased cost and lost revenue 2. storage operators due to increased cost. The three main impacts are described below and are in direct conflict with the Principle Objectives of Ofgem.

1. Gas turbine combustion dynamics, emissions and operability are impacted by the total level of inerts (principally Carbon Dioxide (CO₂) and Nitrogen) contained in the gas. Certain gas turbine Original Equipment Manufacturers (OEMs) stipulate a maximum level of 4% inerts in their fuel gas specifications, operation outside this specification could invalidate the unit's warranty or service agreement. As a result this will prevent operation of the asset and result in lost revenue and less competition in the market for supplying electricity. Where new build is being considered, an increase in CO₂ to 4 % could restrict the selection of which future gas turbine manufacturer could be used, suppressing market competition.
2. Increasing the level of inerts creates the potential for a greater range of gas composition and specification. Varying gas specification within this wider range will lead to a requirement for unpredictable gas turbine re-tuning in order to maintain combustion stability and dynamics within the OEM's specification to avoid warranty and Environment Agency breaches. Currently, re-tuning of gas turbine combustion systems takes around 4 hours, is costly as it requires the services of specialist OEM combustion engineers to retune the combustion system and prevents flexible, load following operation during that period. This lack of flexibility will not only impact on being able to support intermittent generation and security of supply but lead to loss of revenue, the magnitude of which will be dependant upon when the gas composition changes. In addition changes in Gas Quality could result in gas turbine start up and transfer issues. This represents a real risk to the reliability of future operations



especially for stations operating in a cyclic mode with implications for providing support for intermittent generation and hence electricity system security.

3. The proposed increase in CO₂ of the gas composition will increase the amount of CO₂ released to the atmosphere and will lead to additional costs for gas turbine operators because they will have to pay for the increase in inherent CO₂ through EU ETS liabilities.¹

The Principal Objective of Ofgem is “To protect the interests of existing and future consumers where, taken as a whole, those interests include the reduction of greenhouse gases and security of supply”². Taking the above representation into account it is difficult to see how modification proposals 498 and 502 protect the interests of customers, will reduce greenhouse gases and not have a detrimental effect on the security of supply of the electricity network.

In addition the current BSI consultation on gas quality EN 16726 by CEN³ proposes a limit on CO₂ of 2.5 %. “At network entry points and cross border points between CEN member states the maximum mole fraction of carbon dioxide shall be no more than 2,5 % mol/mol. However, at entry points where the gas entering will not flow to another member state’s network through a cross border point, a higher National limit of up to 4 % mol/mol may be applied, provided that the network is a dry network and not connected to installations sensitive to higher levels of carbon dioxide, e.g. underground storage systems.”

Yours sincerely

Jeff Chandler
Head of Gas Strategy
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¹ http://ec.europa.eu/clima/policies/ets/monitoring/docs/gd1_guidance_installations_en.pdf p80/81

² https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/48134/2151-ofgem-review-final-report.pdf p20.

³ <http://drafts.bsigroup.com/Home/Details/53031>