

10 May 2019

Joe Duffield
Ofcom
Riverside House, 2a Southwark Bridge Road
London, SE1 9HA

Dear Joe,

Re: Leased Lines Charge Control Model External Review

This letter confirms that Cartesian has carried out an independent, external review of two charge control spreadsheet models (the 'base year adjustments model' and the 'dark fibre model') and associated documentation. Under the terms of Cartesian's engagement with Ofcom, Cartesian was required to review the models and identify any issues to Ofcom that potentially threaten their robustness.

Our review of the models was conducted in 3 stages. First, we reviewed the documentation provided by Ofcom to gain an independent understanding of the model structure and to ensure that the model and documentation were congruent.

Next, we ran tests to validate the key inputs and assumptions of the models to test that the model was robust to varying inputs and did not contain logical errors. We also reviewed the code on each worksheet both manually and using automated Excel model auditing tools.

Finally, we analysed the model from the perspective of an independent user for potential style, formatting and other usability issues that could potentially lead to unexpected issues.

We documented the results of our review in a draft report for Ofcom. The report was updated and finalised following feedback from Ofcom.

SUMMARY OF FINDINGS

We found that both models capture the intent as expressed in Ofcom's documentation.

We identified one issue in the base year adjustments model, which has since been fixed by Ofcom, which could have led to errors in the model under certain circumstances. We also noted that data validation was not applied to certain inputs, however Ofcom informed us that these inputs were linked from another workbook (not reviewed) where these inputs were validated.

In the dark fibre model, we identified one discrepancy in the value of a model input between the documentation and the model. Ofcom subsequently traced the source of the discrepancy and we expect this to be resolved in the final, published version of the model. We also identified other minor discrepancies in the documentation which Ofcom intends to address.

REVIEW LIMITATIONS

Cartesian's review was carried out over a period of approximately three weeks to fit in with Ofcom's overall BCMR programme plan.

The review was based solely on documents and modelling files made available to us at the time of our review, and our review comments cease to be valid against any alternative versions.

Our approach has been consistent with professional standards and methods typically deployed in modelling reviews of this type.

This letter has been prepared solely for the information and benefit of Ofcom consistent with the terms and conditions of our engagement. Cartesian makes no representation or warranty to other parties as to the information or conclusions contained herein or the ability to rely on such.

Yours sincerely,



Michael Dargue
Vice President