

From: [Andrew Springett](mailto:Andrew.Springett)
To: [Andrew Springett](mailto:Andrew.Springett)
Subject: Doc 4.16: Checking statement - TPM CBA - 2019/06/20
Date: Thursday, 26 September 2019 2:26:38 PM

From: Brian Bull [mailto:bbull1@hotmail.com]
Sent: Thursday, 20 June 2019 12:33 PM
To: Jo Mackay
Subject: Checking statement - TPM CBA - 2019/06/20

Hello Jo

As discussed, this email is to summarise my progress on the TPM CBA checking to date (i.e. as of 20 June 2019). I will send another separate email on the cost calculation checking.

Cheers
BB

Summary

Working with the TPM team, I have checked many aspects of the draft TPM CBA and have found some errors. To my knowledge, all errors identified have been fixed or were, at last notice, planned to be fixed. I cannot guarantee that all the CBA materials I received are completely error free - but based on the checks I have carried out, large parts of the analysis *appear* to be error-free.

I have not received the current ('final?') version of the CBA and so cannot comment on changes between it and the version I hold.

During the checking process, I have raised various methodological issues with the Authority. I consider that the 'first tier' methodological issues have now been addressed by the Authority. Some 'second tier' methodological issues are still outstanding.

Materials received

Between early March and early June, I received several draft versions of the TPM CBA working files. I believe I received all important files, except for some of those used in the preparation of the demand models.

I received two drafts of the TPM CBA consultation paper, and several earlier working papers and internal documents.

I have not received the 'final' version of the TPM CBA working files, nor any draft versions dated after 5 June 2019. Nor have I seen any documents prepared for the Board or for

consultation. I understand the Authority is planning to provide me with these materials in the coming week.

Checks carried out

I have provided the Authority with a spreadsheet recording the checks I have carried out and their findings.

In general, I have reviewed most aspects of the TPM CBA. This includes:

- checking the spreadsheets used to prepare the inputs to the Python code (and those spreadsheet's own inputs, in turn)
- checking that data were correctly transcribed from those spreadsheets into Python input files
- checking the main and auxiliary Python code for the base case and 10 'core runs'
- checking two out of four 'top-down models'
- checking the minor calculations used to prepare various figures in the consultation paper.

I have reported any problems to the TPM team, who have addressed them, or seemed to be in the process of addressing them when last seen.

Checks not carried out

I have not checked any aspect of the preparation of the demand models.

I have checked the Python code for the base case and 10 'core runs', but not for any other runs or sensitivities.

Two out of four 'top-down models' were not ready to check when I last saw them.

I have not checked the transcription of modelling results into any publication document.

Conceptual issues

During the checking process, I identified some conceptual issues with the approach taken.

I discussed a list of 'first tier' conceptual issues with the Authority. Among these were that:

- some of the benefits reported in the draft CBA appeared to be wealth transfers rather than economic benefits
- the draft CBA did not consider the benefit of the TPM in terms of leading to better transmission investment decisions
- the cost allocation under the proposed TPM in the later part of the modelling horizon was not well modelled.

To the extent that these concerns were valid, they were addressed by the TPM team.

I then sent a list of 'second tier' conceptual issues to the Authority. In short, they are that:

- the calculation of the net benefits of changing the LCE allocation seemed to need to be redone from scratch
- I was puzzled by two of the elasticities used
- the 'Transport charge adjustment - for demand growth' part of the model seemed to be working oddly
- the model may be overstating the impact of the status quo HVDC charge on Meridian's generation investment plans.

I am not sure to what extent these 'second tier' conceptual issues have since been addressed.

Conclusion

I think this briefly sums up the current state of play - I am happy to provide more detail on any aspect.

Regards
Brian Bull

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