

From: [Andrew Springett](mailto:Andrew.Springett)
To: [Andrew Springett](mailto:Andrew.Springett)
Subject: Doc 4.13: FW: Second tier methodological issues
Date: Thursday, 26 September 2019 3:00:53 PM

From: Brian Bull [mailto:bbull1@hotmail.com]
Sent: Tuesday, 4 June 2019 12:40 PM
To: Jean-Pierre de Raad; Jo Mackay; Tim Sparks
Subject: Second tier methodological issues

Hello all

We recently had a good teleconf, including Doug, where we discussed some of the main methodological issues in the TPM CBA. I came away from that meeting feeling that good progress had been made.

I was just speaking to Jean-Pierre on another topic, and he tasked me to prepare an email listing the 'second-tier' methodological issues in the TPM CBA - i.e. those that, while less important than those discussed at the recent teleconf, still seem somewhat important to me.

That list is below. All the items on it were already included in the 'master checking sheet'. Note, I have not included anything relating to the 'top-down analyses' which I understand are still in progress.

1. I am not sure where the calculation of the net benefits of changing the LCE allocation has got to. When I last saw this, it seemed to me to present a pure wealth transfer - or in other words, it considered consumer welfare but not producer welfare. I would be interested to see the current version of this calculation. (*Item #11 on 'BB - Methodological queries' tab of master checking sheet*)
2. I had two rather naive questions about the elasticities used (*item #21*):
 - a. Is it right that the industrial demand is so inelastic? I would have thought at least some industrials would be highly elastic - with peak quantities currently suppressed by response to RCPD - and general operational viability dependent on power being affordable.
 - b. For mass market demand, I was surprised by the scale of the cross-elasticity between peak and off-peak. I can't figure out why the removal of RCPD would lead to a rebound in off-peak demand, yet (due to this cross-elasticity), this is what the model shows.
3. I was puzzled by the 'Transport charge adjustment - for demand growth' part of the model. I can see what it is meant to do, but it does have a couple of odd effects (which, I suppose, will affect the pattern of modelled generation build): (*item #22*)
 - a. Price separation develops between the LSI and the rest of the country over

time - with average peak prices at Benmore dropping to 80% those at Haywards by 2040. Seems unlikely especially with HVDC investment,

- b. Whakamaru prices are particularly affected by the adjustment (an artifact, I think, of low and changeable net demand?) - with average prices at Whakamaru dropping to 64% those at Haywards by 2040.

- 4. I think the model may be overstating the impact of the status quo HVDC charge on Meridian's generation investment plans (*item #23*). It has been thoroughly canvassed in the past that the marginal signal of the HVDC charge is weaker on incumbents, especially Meridian, than on new generators. I think this effect has not been incorporated into the current round of modelling. In a recent version of the CBA, at least one large Meridian investment (the North Bank Tunnel) was greatly deferred under the alternative scenario - resulting in a large modelled disbenefit to consumers (as set out in para 8.94 of the CBA). This might no longer be the case if the modelling took into account that Meridian faces a weaker HVDC price signal than other parties.

Hope there's something helpful in the above,
Cheers, Brian

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