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Re: Integrated cost-benefit analysis (CBA) of the Market Development Programme (MDP)

Transpower recognises that the paper *An integrated cost-benefit analysis of the Market Development Programme*, 13 September 2010, is not a formal consultation, but feels that it is important to provide feedback, due to the significance of the role of the CBA in decision making.

The aim of the paper is to ensure that the individual project CBAs are firstly robust in their use of consistent methods and inputs, and secondly recognise and account for the interdependencies between projects.

The paper itself notes that “The results presented in this paper should not be quoted. They are illustrative only and may change significantly with further development and analysis of the MDP projects and CBA inputs”. In this light, judging the proposal as concepts that need to be considered when evaluating the value of a project, the framework seems reasonable.

However, as it stands, the proposal has drilled down to financial detail that, although caveated in this paper, has already been used to support the Customer Compensation Scheme proposal, 10 September 2010, where the numerical conclusions were not so clearly caveated. This is the danger of publishing financial approximations at so early a stage in many of these projects’ development. Once quoted, these figures will continue to be re-published until they are taken as established, and sub-optimal actions may result as a consequence.

Given that each MDP project will conduct its own CBA, the manner in which such a document could add most value would, as recognised in the second aim, be by focusing on the interdependencies between the projects and the consequences thereof. While these are briefly discussed, the treatment is superficial. Refinement and a clear matrix of interdependencies could help inform a debate on, for example, the detailed design and the appropriate sequencing of the projects.

Accepting that the figures are preliminary estimates, it is clear that there are certain drivers that are fundamental to the CBA of each project. These are recognised and identified (§4.1.3, §4.2.3, §4.3.2) yet they are addressed largely at the same level of detail as relatively insignificant factors, and no sensitivity analysis is done on them.

In many cases, the figures used as inputs into the analysis are very large, so the assumption that consequence X has say a 10% or 11% response will have a huge impact on the financials. This can dramatically overstate or understate the costs and/or the benefits. In these cases it is important that the likely variability of the individual inputs be determined so that the key influences on financial outputs can be seen. At this stage the sensitivity analysis does not do this.

Similarly, the way the low and high scenarios are used could be misleading. Each project has a low or high scenario, but it is implicitly assumed that the overall MDP programme will either be all low or all high. The projects are probably largely independent in this regard, so combinations of some low, some high should be considered. As the 'low' and 'high' apply to costs and benefits, the sensitivity analysis should also consider low cost, high benefit and low benefit, high cost scenarios.

The use of these types of approximations arises as a result of the MDP projects being at an early stage of development. All projects are still undergoing consultation and the preferred options have not been determined. Therefore, developing a detailed CBA paper would seem to be premature at this stage.

We believe that there are a number of omissions and errors in the document, notably:

- On transmission pricing there seems to be a significant logic gap between the approach used for economic investments (which concludes that a locational charge would produce a zero net benefit) and reliability investments (for which a locational charge is assumed to produce a huge net benefit), given that today's economic need, if unmet, becomes tomorrow's reliability need. There is not really any difference between economic and reliability investments, other than that the application of the reliability criteria may sometimes permit a greater level of transmission investment (effectively equating to a higher VoLL). The paper does not explain why the modelling used to evaluate the effectiveness of locational charges reflecting the cost of economic investments could not be extended to cover reliability investments, or on what basis the Authority considers that there could be substantial benefits to be derived from the deferral of reliability investments in response to incentives provided by bespoke transmission charge adjustments. Some potentially significant costs also seem to have been excluded from the TPM CBA framework, in particular the increased costs that could result from additional disputes over prices. Past experience suggests that uncertainties associated with long run marginal cost estimates or the complexities and uncertainties associated with the definitions needed to implement a flow tracing allocation method could lead to substantial increases in disputes over charges. Costs incurred by both sides to such disputes could easily amount to \$1million to \$5million p.a. (a present value of c.\$14million to \$70million). These costs would be net costs to the nation, not simply transfers, because the activities required to settle the disputes would not be required if the TPM were not changed.

In addition:

- Figure 1 implies schematically that the role of the programme is to rotate the demand curve about its existing equilibrium. It should perhaps be better thought of as to enable demand to express its true underlying elasticity.
- In Table 1, the transmission pricing problem seems incompletely expressed, as it ignores the desired efficient outcome of “recovery of sunk costs in a manner that minimises distortions to production/consumption and investment decisions by grid users and consumers.” (EC’s high-level options consultation paper).
- On dispatchable demand:
 - The calculation of productive efficiency benefits is based on not producing electricity cheaper but on producing goods for which electricity as an input is cheaper. This takes it outside the market under consideration. A better definition of productive efficiency as at §3.3.6.
 - On allocative efficiency, the benefit is seen as that of increased consumption given reduced prices, which seems perverse for this project. The allocative efficiency benefits are those resulting from participants being able to express their underlying demand elasticity.
 - There is a significant benefit missing, which is the security benefit of enabling Transpower’s grid support contracts (GSCs) to become part of the wholesale market, through Transpower contracting with load or load aggregators to offer their load as dispatchable demand. We described this in our last submission.
- In Table 6, a cost is labelled as “Stronger incentives on transmission network owner to overbuild, if responsible for revenue adequacy”. This implies that Transpower is currently incentivised to overbuild, which we are not. The “Stronger” should be removed.
- In locational price risk management there is a significant benefit missing, which is the increased incentives (under an FTR regime at least) for participants not to withhold capacity to avoid constraints, and thus to increase allocative efficiency through more efficient bids and offers.
- The linkage between dispatchable demand and transmission pricing is tenuous (§3.4.9).
- The assumption that dispatchable demand will accompany scarcity pricing (§3.5.2 and 3.5.6), in effect as a precursor, seems strong. We would regard this order as desirable, not essential. In reality, priorities and resource constraints may be the key drivers of the order of introduction of these projects.

We shall comment on other individual elements of each project’s CBA when responding to consultations on the particular project.

In conclusion, although the paper provides some preliminary evidence that the MDP projects are individually and collectively beneficial (except perhaps for low-participation dispatchable demand and the TPM, where the status quo arguably has little wrong with it), this was never really in doubt. The real issues are the choice of

options within each MDP project, and their interdependencies in terms of design and sequencing. The paper does little to advance the understanding of these.

Yours sincerely

A handwritten signature in black ink, appearing to read 'R Fletcher', followed by a small dot.

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