## Appendix One: Meridian's response to the Electricity Commission's questions - Stage 2 Transmission Pricing Consultation

**Q1. What, if any, bearing do you consider the Authority's proposed objective has on the review's approach to analysis and evaluation to date?**

Meridian notes that the regulatory framework, under Part 12, section 12.75 of the forthcoming Industry Participation Code requires that if a conflict arises when applying the pricing principles (section 12.74), that the Electricity Authority should resolve the conflict with the objective of best satisfying the Authority's statutory objective.

As the consultation paper acknowledges the Electricity Authority will be an Independent Crown Entity rather than a Crown Agent. This means that the Authority is required to "have regard" to statements of government policy concerning the electricity industry issued by the Minister, rather than "give effect" as is required of the Electricity Commission. However, Meridian understands that MED is currently of the view that there will not be a government policy statement post 1 November 2010.

With regards the question of what bearing the Electricity Authority's proposed statutory objective[1] should have on the analysis undertaken to date, Meridian considers that the empirical analysis that has been undertaken should not be impacted by any change in the overarching regulatory framework. Good analytical work will always stand on its merits. Meridian does consider that the narrower objective will need to be considered, and the appropriateness of the pricing principles contained in Part 12 reviewed in light of the new objective.

Meridian understands that the Electricity Authority intends to consult shortly after its establishment on a draft consultation charter, which contains Code amendment principles[2]. The interaction of these Code amendment principles with the Part 12 pricing principles will be important. A matter the Authority will need to consider is whether the Code amendment principles will have any statutory or regulatory standing, relative to pricing principles that will have been codified. Meridian looks forward to engaging with the Authority on this charter, the Code amendment principles and their relationship with the transmission pricing principles.

Appendix Two contains a set of draft guiding principles that was prepared for the CEO Forum for the purposes of beginning engagement with the Authority on such matters. These are provided here as information.

**Q2. Do you agree that the Commission has identified the relevant factors in its assessment (paragraphs 3.2.6 to 3.2.13) of whether nodal pricing provides adequate signals for efficient generation and load investment? If not, please explain your reasons.**

The Commission has identified three factors that effect whether there is likely to be a benefit from providing enhanced locational signals:

- Current nodal prices do not fully reflect the value of lost load during periods of scarcity;
- Transmission investment is lumpy, and exhibits economies of scale; and
- Regulatory planning approval criteria may mean that there is a conservative approach to investment approval.

[1] At the time of preparing this submission the Electricity Industry Bill had not been enacted.
[2] Presentation to Regulatory Managers by the Electricity Commission and CEO Designate of the Electricity Authority, 16 September 2010.

Meridian agrees that these are relevant factors.

**Q3. Do you agree with the Commission's approach (outlined in paragraphs 3.2.21 and 3.2.22) to determining whether any form of additional locational signal through transmission pricing is necessary? If not, please provide reasons.**

Meridian supports the Commission's analytical approach to determining whether any form of additional locational signal through transmission pricing is necessary.

**Q4. Do you agree that there appears to be limited value in providing an enhanced locational signal to generators to ensure co-optimisation of economic transmission investments and generation? If not, please explain your reasons.**

Meridian agrees that there appears to be limited value in providing an enhanced locational signal to generators to ensure co-optimisation of economic transmission investment and generation. Meridian notes particularly the following conclusions drawn by the Commission:

> *"GEM produces an NPV of around $14 million from moving to an ideal pricing methodology. Given the margin of error associated with estimating the input parameters for the modelling, it is reasonable to interpret the $14 million as being zero. Even if the $14 million were to be considered a potential benefit of greater than zero, it is important to note that this is an upper bound. In reality, a transmission pricing regime with locationally-varying charges is unlikely to achieve this upper bound, and may – if not precise enough – lead to unintended inefficiencies by over-signalling location costs leading to poor investment decisions around the type, timing and location of generation."*[3]

Meridian queries whether the analysis undertaken will sufficiently capture the impact of the increased HVDC charge (ie post Pole 3 commissioning) on efficient market operation. In other words, does a step change outcome eventuate?

**Q5. Do you agree that it needs to be determined whether the current locational signal provided by the HVDC charge is causing or is likely to cause inefficient operational and investment decisions? If not, please explain your reasons.**

Meridian notes that the Commission has not investigated whether the current locational signal provided to South Island generators will result in inefficiencies or a dis-benefit:

> *"…the analysis does not show whether there is a significant dis-benefit to a locational signal for generation; rather it suggests there is no or negligible benefit to such a signal."*[4]

Meridian recommends that this analysis is undertaken.

Meridian suggests that the Commission could assess the dis-benefits of the HVDC charge by:

- First modelling the NPV of future system costs that might arise if South Island generators are subject to a HAMI based HVDC charge;
- Then model the NPV of future system costs that might result if generation and transmission are perfectly co-optimised (the Commission has already undertaken this step); and

[3] Paragraph 3.3.13.
[4] Paragraph 3.3.15.

- Then compare the two results to provide an indication of the dis-benefits of the current HAMI based HVDC charge.

Meridian considers that this analysis will form an important input into the next stage, and will help to ensure that a principled, non-arbitrary decision can be made in Stage 3 (ie selection of the preferred option).

The Commission's decision framework for considering four options for charging for the HVDC (set out in Figure 2, page 33) starts from the position of considering whether the benefits of incentivising North Island generation (through the HVDC charge to South Island generators) are outweighed by the costs. If the decision framework started from the question "is an enhanced locational signal necessary" the conclusions that might be drawn may be different. Understanding this will be important in the next stage of the Commission's review of transmission pricing.

As a South Island generator that pays approximately 75% of the HVDC cost – currently $85m per annum and anticipated to increase to $140m per annum – Meridian considers that this information (quantification of the dis-benefits of the signal) is critical to ensuring a principled and non-arbitrary decision can be made in stage 3 of the Commission's process – selection of the preferred transmission pricing methodology.

**Q6. Do you agree with the high-level analysis provided on the costs and benefits of the current HVDC charging regime? If not, please explain your reasons.**

*Deferring future links (a)*

On the basis of the 2010 SOO scenarios, Meridian agrees that the benefits of preventing or deferring the need for a new inter-island link are unlikely to be material.

*AC upgrades to support northward flow (b)*

Meridian agrees that the benefits of preventing or deferring the need for AC transmission upgrades that support northward flow are probably not material.

*Impact on South Island generation investment (c)*

Meridian agrees that the cost of deferring some South Island generation options (c) is likely to be material.

*Impact on South Island operational decisions (d)*

Meridian confirms that it does take into account the HAMI methodology and its impact on Meridian's share of HVDC costs in its operational decisions. The ability of South Island generators to apply for a dispensation from increased HAMI charges as a consequence of a grid emergency underlines the arbitrary and non principled basis of the current charge. Further, it acts as a general distortion on the energy market (during non emergency periods) as South Island generators are not free to exercise operational decisions without penalty.

*Investment in incremental South Island generation capacity (e)*

Meridian confirms that it has taken into account the HAMI methodology and its impact on Meridian's share of HVDC costs when considering investments in incremental peaking capacity. Therefore, Meridian agrees that cost (e) is material.

*Impact on competition in generation investment in the South Island (f)*

The effect of the current charge is that:

- Meridian's competitors have a greater incentive to embed generation options than Meridian does.
- It has less of an impact on Meridian's incentive to invest than other parties given the size of Meridian's portfolio.
- The charge is likely to act as a significant barrier to entry for new investors wanting to connect plant directly to the transmission grid in the South Island.

However, Meridian agrees that this cost is unlikely to be material.

**Q7. Do you agree that the Commission has correctly identified the four possible options for the HVDC charge? If not, please explain your reasons and provide alternative options.**

Meridian agrees that the Commission has identified four possible options for the HVDC charge. However, Meridian notes that there are a number of alternatives within these options which could also be considered by the Commission in stage 3. For example:

> The Commission notes in paragraph 4.3.1 (d) that the postage stamp option could be implemented by spreading costs widely over load and/or generation in both islands.

In the event that the Commission considers that a separate HVDC charge remains appropriate Meridian considers that the option of splitting the incidence of the HVDC charge across NI loads and SI generators should be considered in stage 3. Also, consideration should be given to sharing the incidence based on capacity utilisation (this could reflect change in flows during dry/wet years).

**Q8. What are your views on the validity of each of the options?**

*Status quo – HVDC Charge to South Island generators*

The original premise for this charge was to provide an enhanced locational signal to South Island generators. The Commission's latest analysis confirms (i) there is no economic benefit to the charge, and therefore (ii) that it is arbitrary. Once a regulator has concluded there is no efficiency rationale for an otherwise arbitrary charge it should be removed. The Commission has acted with credibility in conducting and publishing its analysis. It should now remove the charge. To leave the charge in place in these circumstances undermines the Commission's good work and calls into question the commitment to principled regulation.

In addition, the current charge provides an incentive to embed generation within a distribution network. This could result in a failure to maximise valuable resource use, as investors reduce the capacity of the plant to fit behind the network's load (lost opportunities for achieving potential greater economies of scale). Also, it could result in increased losses within a distribution network.

*Per MWh charge & incentive free allocation*

Meridian considers that both these options are essentially a variation on the theme of taxing South Island generators. Given the GEM analysis, Meridian considers that the case for providing an enhanced locational signal has not been made and therefore does not consider that a charge of this nature is appropriate.

Adopting an incentive free allocation to this charge would, in Meridian's opinion, put industry participants on notice that the Authority is not above arbitrarily loading costs onto transmission customers where it thinks short term consequences will be small. What is at stake here is long term confidence in the regulatory regime, and an early opportunity to establish the reputation of the Authority.

In the event that the Authority decides that a signal to South Island generators remains appropriate, Meridian considers that the per MWh charge is preferable to the current HAMI charge. However, Meridian does not consider that the empirical analysis undertaken thus far supports such a decision.

*Postage stamp*

In terms of considering the appropriateness of a postage stamp charge, Meridian considers that the Authority should consider:

- Analysis previously presented by Meridian that showed that Meridian (and likely other South Island generators) will suffer a private detriment from the HVDC Pole 3 upgrade with the current HVDC charge;
- That there are a range of beneficiaries. Meridian has previously acknowledged that South Island generators are beneficiaries of the HVDC link, but are not the sole beneficiaries. North Island loads are also a significant beneficiary. During dry periods South Island loads and North Island generators are beneficiaries;
- The HVDC link is an integral part of maintaining a national wholesale electricity market, to the benefit of all market participants and electricity consumers;
- The lack of efficiency rationale for the current charge, highlighting its arbitrary nature; and
- The impact of the Authority's proposed statutory objective, the requirement to consider 'other regulatory factors' and the pricing principles contained in Part 12 of the Industry Participation Code during Stage 3.

**Q9. Do you have specific lower-level issues around the structure and details of HVDC charging that you would like considered in stage 3?**

Meridian considers that the majority of the key issues around the structure and details of the HVDC charging regime have been addressed in stage 2. However, Meridian considers that it is important that analysis is conducted to investigate the dis-benefit of providing an enhanced locational signal to South Island generators in stage 3. Suggestions of how this could be done are provided in our answers to Questions 5 and 15.

**Q10. Do you agree with the analysis provided in the section headed "Analysis of benefits of signalling reliability-driven investment"? In particular do you agree with the conclusion that any incentive through the TPM which defers future reliability-driven transmission investment will likely provide some net benefit? If not, please explain your reasons.**

Meridian is concerned that the Commission applies a materiality test to the conclusion that "any incentive through the TPM which defers future reliability driven transmission investment will likely provide some net benefit".

Meridian has previously submitted, for example in relation to Grid Support Contracts and Upper South Island investment options, that delays in investing in transmission should not occur if the result is reduced competition in the energy market. Transmission alternatives, particularly generation options, could lessen competition because, among other things, they do not support two way flows.

**Q11. The Commission has decided not to pursue the options outlined in paragraph 4.1.8. Do you agree with the Commission's assessment (including the analysis contained in section 5 of Appendix 2) that these options are not worth pursuing? If not, please explain your reasons.**

Meridian agrees with the Commissionõs decision not to pursue the options outlined in paragraph 4.1.8, namely augmented nodal pricing, market-wide tilted postage stamp, NZIER ôbut forö analysis and the arbitrageur/capacity pricing approaches proposed for the HVDC.

**Q12. If the Commerce Commission proposal outlined in paragraph 4.2.16(c) is adopted for the final determination, do you think this will address the regulatory anomaly referred to above?**

Meridian acknowledges the concern that lines businesses have limited financial incentive to reduce transmission costs to their consumers.

Has the Commission considered the relationship of this proposal with the requirement under the Electricity Governance (Connection of Distributed Generation) Regulations 2003 that lines businesses share avoided transmission costs with the relevant distributed generator?

Meridian looks forward to further engaging with the Commerce Commission on this matter.

**Q13. The Commission has identified three options alongside the status quo to defer or avoid reliability transmission investments. Do you agree that these options are worth pursuing? Are there other options which deserve further consideration? Please provide reasons.**

The Commission has identified ôbespoke postage stampingö, ôflow tracingö and ôimproving the transmission alternative regimeö as options alongside the status quo to defer or avoid reliability transmission investments.

*Bespoke postage stamping*

Bespoke postage stamping appears to be ôtransmission alternativesö under a different name. As a consequence, Meridian has a number of concerns, not limited to:

- whether a ôcarrot and a stickö type system is an appropriate long term, sustainable investment signal;
- the subjectivity of determining the LRMC of transmission in a region;
- concerns regarding incentives for gaming û parties may be incentivised to withdraw capacity in order to encourage more incentives at an alternative site, or to receive a credit for refurbishing existing plant so it continues to operate;
- the relationship of these proposals to mechanisms that are proposed to address demand side participation/demand side bidding in the competitive wholesale market; and
- concerns voiced previously with regard potential distortions from generation transmission alternatives to the competitive generation market.

Meridian understands the Commission is undertaking more work in this area, and hopes that these concerns can be addressed in a manner that is consistent with the Authorityõs proposed statutory objective - promote competition in, reliable supply by, and the efficient operation of the electricity industry for the long term benefit of consumers.

*Flow tracing*

Meridian considers that this proposal is interesting. If this approach to charging is to be undertaken care will need to be taken to ensure that charges can be sustainable or durable over time, otherwise it will be at risk of criticism for lack of predictability and regulatory certainty. In particular, connected parties need to have some surety of the magnitude of charges and how these may change over time as new investments (whether demand or transmission) are made.

Meridian considers that more work should be undertaken in this area to assist participants in understanding the long run implication of this option.

*Improvements to the transmission alternative regime*

Meridian acknowledges that parties have over time had concerns with the potential for conflicts to arise between Transpowerös role as ógrid ownerô and óassessor of transmission alternativesô Meridian agrees that introducing an independent decision maker would be an incremental improvement. However, Meridian continues to have reservations and concerns regarding transmission alternatives, and the desire to ensure that transmission alternatives do not inappropriately delay transmission investments. Transmission is an enabler of both competition in generation and retail, and this must be acknowledged in any comparison of investments.

**Q14. Can you suggest other matters to be included in the Commission's stage 3 deliberations on charging for HVDC costs?**

As discussed above, Meridian agrees that the efficiency analysis performed by the Commission has laid a sound foundation for decision-making on the TPM. Also, we agree that stage 3 must involve a consideration of other regulatory factors, the Authorityös proposed statutory objective, and the interrelationship of Part 12ös pricing principles with the proposed draft Code amendment principles.

Meridian submits that, given the change in regulatory framework and regulator, stage 3 needs to proceed in two parts. First, the Authority should lead a discussion on the new statutory purpose statement, the pricing principles carried over to the Code, other regulatory factors, and how the consideration of these factors is influenced by the efficiency analysis. The second step is to apply this analysis to the TPM options and select a preferred option.

**Q15. Do you agree with these preliminary conclusions? If not, please provide reasons.**

Meridian agrees with the statements:

- ó*There is little or no economic benefit in encouraging North Island generation through an HVDC charge on South Island generators (it will not result in a significant decrease in transmission costs*ô (paragraph 4.3.3(a)); and

- óThe HAMI allocation of HVDC charges is inefficient and should be changedô (paragraph 4.3.3(b)).

Meridian does not agree with the statement:

- ó*A per MWh HVDC charge on South Island generators would not cause significant inefficiency*ô (paragraph 4.3.3 (c)).

Meridian considers that a per MWh based HVDC charge is likely to result in a more *productively efficient* outcome than the current HAMI based HVDC charge.

However, Meridian is concerned that the Commission investigates the potential *dynamic efficiency* impacts of a per MWh based HVDC charge relative to no charge. Meridian suggests that the Commission uses its GEM model to examine the impact of levying a per MWh HVDC charge on South Island generators on the combined cost of generation and transmission.

Meridian suggests that the Commission could assess the dis-benefits of a per MWh based HVDC charge by:

- First modelling the NPV of future system costs that might arise if South Island generators are subject to a per MWh based HVDC charge;
- Then model the NPV of future system costs that might result if generation and transmission are perfectly co-optimised (the Commission has already undertaken this step); and
- Then compare the two results to provide an indication of the dis-benefits of a per MWh based HVDC charge.

Meridian considers that this analysis will form an important input into the next stage, and will help to ensure that a principled, non-arbitrary decision can be made in Stage 3 (i.e. selection of the preferred option).

Also, Meridian does not agree with the statement:

- "*it may be possible to implement a practical and sustainable incentive free allocation of HVDC charges to South Island generators, perhaps by allocating HVDC charges proportional to historical output over some period*" (paragraph 4.3.3(d)).

While as a technical question it might be possible to design a per MWh charge or another charge that does not influence operational decisions in the short term, Meridian submits this is not the right question. A decision by the Authority to load a portion of transmission charges on a sub-group of transmission customers, driven primarily by a judgment that those customers would not be able to pass the charge on and would not have a justification for changing short term behaviour, will be seen for what it is – a very poor precedent. As this accurately describes the genesis and effect of the current HVDC charge, a decision to continue the charge will be viewed the same way. Industry participants will be put on notice that the Authority is not above arbitrarily loading costs onto transmission customers where it thinks short term consequences will be small. As Meridian has previously submitted, there are several other components of the grid that would logically have to be treated the same way[5].

For these reasons, Meridian submits the issue is not whether a particular charge can be designed to be "incentive free" in the short term. What is at stake here is long term confidence in the regulatory regime, and an early opportunity to establish the reputation of the Authority[6].

**Q16. Do you agree that connecting parties should be able to negotiate mutually-beneficial access arrangements for independently provided new connection assets? If not, please explain your reasons, giving specific examples where possible.**

Yes, Meridian agrees that connecting parties should be able to negotiate mutually beneficial access arrangements for independently provided new connection assets.

[5] See slides 14-15 of Meridian's presentation on the Electricity Commission's Transmission Pricing Methodology Guidelines' one day conference 24 February 2006. Meridian submitted that HVAC lines - 'Auckland to Northland', 'Waikato to Auckland', 'Christchurch to Nelson Marlborough' and 'Waitaki to Christchurch' would likely meet the Commission's 'connection like' test.
http://www.electricitycommission.govt.nz/pdfs/opdev/transmis/tpg/hvdc-presentations/Meridian.pdf

[6] Meridian refers the Commission to paragraph 3.4.6 of its paper "Transmission Pricing Methodology Consultation Paper", 1 November 2006.
http://www.electricitycommission.govt.nz/pdfs/opdev/transmis/pdfsconsultation/tpmnov06/TPM-consultation-paper.pdf

**Q17. The Commission has developed three options that it considers have potential to encourage efficient investment in static reactive power. Which of these options do you consider best encourages this objective? Please give reasons.**

At this stage, Meridian considers option 3 (KVar charge) appears more attractive on the basis that it will encourage innovation and more cost effective solutions. However, some further thought may be necessary ï what would happen if hypothetically a region had Transpower static reactive support equipment installed, and then all the distributors in that region reduced their KVar usage to zero because they found a cost effective way of doing this. How would Transpower then recover the cost of its installed reactive support equipment?

**Q18. Are there other options for the allocation of static reactive power costs that the Commission should pursue?**

No further suggestions.