meridian

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Electricity Commission
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by email

Dear Kate

Scarcity Pricing and Compulsory Contracting Option

Thank you for the opportunity to comment on the scarcity pricing and compulsory contracting options paper. Meridian agrees with the approach being taken by the Commission to consider options to pursue for detailed analysis.

Scarcity Pricing

Meridian supports the proposition that prices should reflect scarcity. When a resource becomes scarce, the price for that resource should rise.

Pure Scarcity Pricing

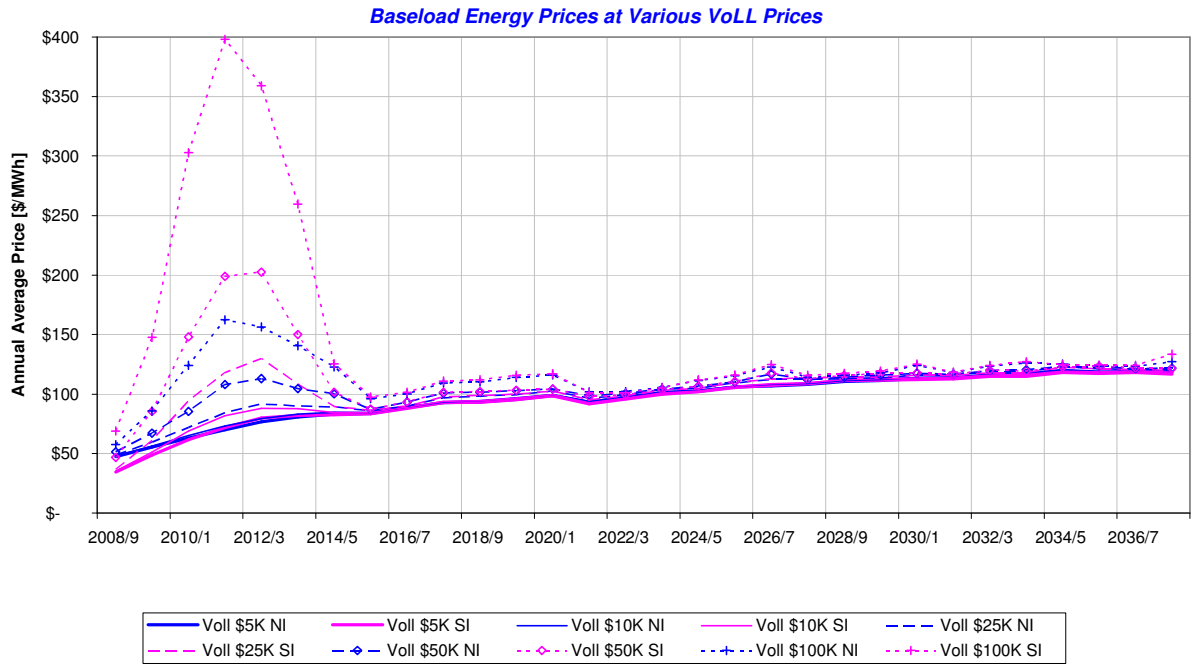
Meridian prefers the 'pure' scarcity pricing model – scarcity pricing mechanism using a VOLL pricing mechanism in situations of forced curtailment. It seems appropriate that there could be two VOLLs, depending on whether the outage was foreseen over time, or an unanticipated energy shortage.

The setting of a VOLL is a step that needs to be taken with great care. VOLL figures need to be based on sound empirical evidence. They also need to be subject to thorough sensitivity analysis, to assess the impact particular VOLL values will have on prices and on market behaviour.

The Consultation paper suggests that, "while scarcity pricing may alter the shape of spot prices, it should not materially alter average spot prices, as these will be influenced mainly by the cost of new supply" (p48, paragraph 2.9b). While this may be the case in a system with an unconstrained grid, it is not the case where the grid is constrained. Some straightforward price modelling by Meridian, presented in figure one below, shows an estimation of average annual prices in each island under particular VOLL prices. This modelling indicates that high VOLL prices before the HVDC upgrade is at full capacity will cause significant and potentially unmanageable price volatility, particularly in the South Island. The market response to these type of prices will be undesirable.

If a VOLL mechanism had been in place some years ago, the development of some volatility would have signalled the need for new generation or an HVDC upgrade. With the HVDC upgrade approved and going ahead, this price signal is not necessary. At the same time, the 'best for New Zealand' market prices are lost.

Figure One



The period prior to full HVDC upgrade capacity is too short a timeframe for new investment in generation. There is no generation investment that could be consented and built in the South Island to benefit from the high prices expected prior to the HVDC upgrade.

High price volatility, and therefore high price risk for retailers, will inevitably be passed on to consumers in higher retail prices. This outcome will hurt residential, commercial and industrial consumers in the short term, without any associated short term security of supply benefit.

Because of this, Meridian recommends that the VOLL price should take effect only after the HVDC upgrade is at full capacity.

Additionally, the VOLL price needs to be set with significant advanced notice for the industry. The Commission needs to be sure that all stakeholders fully understand the implications of any policy decisions in this area, and have time to prepare for those implications. This includes considerations such as allowing existing contract positions to be managed. The consultation paper notes that the Australian NEM provides a two year notice of any change to VOLL. Meridian endorses this approach, and recommends the Commission adopt a minimum notification timeframe of two years.

'Modified' Scarcity Pricing

The 'modified scarcity pricing' mechanisms outlined in the options paper, setting price floors under certain conditions, is unique and untested. In no other market does a mechanism set a price floor every half hour over potentially an extended period, regardless of demand and supply conditions (and therefore relative scarcity). Other markets do not limit scarcity pricing to public conservation campaigns. The evidence from international markets cited in the consultation paper does not provide a clear example, as they all represent a VOLL pricing mechanism in situations of forced curtailment. The potential for unintended consequences from such an untested proposal seems high.

Meridian's concerns with the modified scarcity pricing proposal are similar to the concerns outlined above around pure scarcity pricing. If not implemented carefully, the likelihood of unintended consequences, and the level of impact seem potentially greater under the modified proposal.

Meridian submits that, if the Commission decides to pursue the modified scarcity pricing model, it needs to do so in parallel with the pure scarcity pricing model. The outcomes of both need to be subject to thorough modelling before a decision between the options can be made.

Default Buy-back Arrangement

Meridian supports further work being undertaken on a default buy-back arrangement. Default buy back arrangements will more clearly balance the incentives around calling public conservation campaigns.

There is a question around whether the obligation should be imposed on retailers or generators. The mechanism is aimed at influencing the incentives of generators, but imposes obligations on retailers. If the electricity system only consisted of the five vertically integrated generator retailers, with balanced generation and retail portfolios, this may be appropriate. However, targeting retailers will increase the risks for retailers with long retail positions, and will benefit generators with short retail positions. It will also disincentivise new-entrant retail. We note that new entrant retail, such as lines companies entering retail, was one of the objectives of the Ministerial Review of the Electricity Market.

Appendix Three of the consultation document begins to set out some of the key issues around a default buy-back arrangement. These include coverage, the trigger for the mechanism, and the level of compensation for customers. Again, the detail of these points needs to be thoroughly considered and developed. It is important that the detail are not changed at short notice for political or other reasons. We look forward to long discussion over the detail of the rules that will be required, given the complexities involved.

Compulsory Capacity Contracting

Meridian supports the view of the Commission that compulsory contracting for capacity should not be pursued at this time. Compulsory capacity contracting is a complex and high-intervention approach. Any compulsory contracting is likely to limit the ability of participants to obtain hedges, as the available capacity that generators would be willing to offer in hedge contracts will be reduced.

Risks of Intervention in the Market

Within the electricity industry, participants recognise that there is an important balance to be reached between cost of supply and security of supply. A high level of security of supply will result in higher prices, while lower prices can be achieved if a lower level of security is acceptable.

The current market structure may in fact be balancing these two outcomes in the most economically efficient manner. We recall the *Review of Winter 2008*'s assessment that: "a relatively young market withstood considerable stress and maintained uninterrupted supply of electricity to consumers." The market did this in a one-in-sixty dry year. We also note that the *Review of Winter 2008* observed that 'optimal' security of supply should be achieved at least cost.

Clearly winter 2008 has left a strong perception of a security of supply problem, and this perception needs to be addressed. However, there is a real risk that interventions in the market to increase security of supply will also increase electricity prices. These are not 'free' interventions. Modelling of 'missing money' must remember that to 'find' the money the market must look to electricity prices. Incentives to build more peaking plant must place an economic cost somewhere, and that cost will inevitably be borne in prices to consumers.

Response to Specific Questions

1. What concerns do you have with regard to security of supply under existing arrangements?

Meridian's key concern around security of supply is that discussions about a security of supply problem seem to proceed based largely on anecdote.

We note again the finding of the *Review of Winter 2008*, that "a relatively young market withstood considerable stress and maintained uninterrupted supply of electricity to consumers." Perceptions about security of supply aside, it seems that the existing market arrangements may well be achieving an optimal level of security of supply at least cost.

Meridian has modelled the efficient use of the entire New Zealand electricity system over the last nine years using the SPECTRA model developed by ECNZ. This modelling proceeded to test how a central planner with perfect foresight would run the hydro reserves. The modelling indicates that the existing market results in the use of the hydro reserves approximately as efficiently as a centrally planned system with perfect foresight.

If the current market system is as efficient as central planning with perfect foresight, any changes to the market can at best maintain that level of efficiency, or can only risk a decrease in the level of efficiency.

Meridian acknowledges the possibility that our modelling may be flawed, or may be based on flawed assumptions. We have shared this modelling with the Commission, and with numerous other parties. As far as we know, no-one has undertaken equivalent modelling, or if they have, they have not made it public. We would welcome a discussion on the problems of security of supply based on modelling and quantative analysis.

Additionally, Meridian submits that it is necessary for the Commission to describe what success would look like under any changes to the market framework. It is important to be clear about the concrete security of supply outcomes that these changes to the market are intended to achieve.

2. What, if any, other underlying issues lead to the potential for cost shifting among market participants?

This section of the consultation paper seems to proceed on the assumption that the security of supply solution for New Zealand is the commissioning of additional oil-fired peaking plant. This assumption is contestable.

Beyond this point, the section of the consultation paper on the potential for cost shifting seems to cover the important issues.

3. What is your assessment of pros and cons of scarcity pricing approaches versus compulsory contracting?

Pure Scarcity Pricing Pros:

- Under this option, market dynamics will be strong enough to find the appropriate prices.

Pure Scarcity Pricing Cons:

- In most countries, VOLL is used when there are capacity constraints, not energy constraints. Most countries therefore expect to hit VOLL only for a few half hour periods, not for every half hour for weeks or months.
- A VOLL price set without sufficient care or notice to industry, and implemented prior to the upgraded HVDC reaching full capacity, would have significant impacts on price volatility,

particularly in the South Island.

- A VOLL price implemented prior to the HVDC reaching full capacity would send price signals with a timeframe that is too short for investment to respond to.

Modified Scarcity Pricing Pros:

- If the desired outcome is to send a stronger pricing signal for investment to achieve greater security of supply (albeit at a greater cost), this proposal is likely to achieve that outcome.

Modified Scarcity Pricing Cons:

- A price floor can be expected to push up average prices, particularly in the short term.
- The Commission needs to specify the physical conditions that will result in a conservation campaign (and therefore a price floor). It also needs to specify the physical conditions when a conservation campaign and price floor will be lifted.
- There will remain a lack of certainty about the expected actions of parties, and the regulatory impact of parties not doing what is expected.
- The price floor is likely to lead hydro generators to operate more conservatively, which will lead to higher prices and greater spill. The system will be operated less efficiently as a result.
- The increased prices that a price floor will bring are only likely to delay blackout by one or two days.
- A price floor could lead to perverse outcomes from hydro generators, and may encourage hydro generators to generate when they would otherwise not. For example, if a hydro generator's view on the value of water was $400, and the price floor was set at $500, the incentive on the generator would be to use that water.
- The price floor discourages vertical integration, and discourages vertically integrated companies from having a significant number of retail customers. As a generator, a company will want to be exposed to these regulated high prices. As a retailer, a company will not want to be exposed. This encourages companies to move towards short retail positions.
- The price floor will expose spot market customers, such as medium and large industrials, to high prices for extended periods of time. This can only be undesirable for New Zealand.
- It is also not clear how a price floor will meet the need for a price setting/discovery mechanism where physical supply and demand do not match.
- Setting a price floor is contrary to achieving the best outcomes at the lowest price. There may be better ways to achieve the least cost security of supply solution for New Zealand. To find these, we need an economic cost-benefit study running models to find which mechanism has the lowest cost. Currently, we seem to be working from a theoretical basis, rather than using quantitative analysis and modelling.
- To operate effectively, it seems that the price floor would need to differentiate between Islands, or even between nodes where transmission was constrained.

Compulsory Capacity Contracting Pros:

- Meridian does not see any advantages of a compulsory contracting regime.

Compulsory Capacity Contracting Cons:

- Compulsory capacity contracting moves the NZEM away from an energy-only market approach, which Meridian considers undesirable.
- Generally this approach appears to give increased stability in the price, but at the expense of cost. That is, the average price would increase.

- Given the transmission constraints that exist in New Zealand, it is likely that capacity contracting would been to be undertaken on a regional basis, at least until capacity transmission constraints are resolved. There is then an additional problem of how to move from regional compulsory capacity contracting to national contracting.
- Gaining firm agreement of the companies on generation capability for thermal or hydro, given consideration of (visible or otherwise) fuel stockpiles, will be difficult. The consultation paper notes that there is some complexity here. We consider reaching this agreement would be even more difficult than the Commission is anticipating.
- Monitoring, compliance and enforcement will be a complex and potentially difficult process.
- Any compulsory contracting is likely to limit the ability of participants to obtain hedges, as the available capacity that generators would be willing to offer in hedge contracts will be reduced.
- Additional complexity occurs at every level of this option. In Meridian's view, the complexity and cost of that complexity will outweigh any associated benefits.
- The increase in complexity will be an increased cost for larger companies, and this will be passed on to consumers. Smaller companies will struggle more to absorb this burden.

4. What other options should be considered to improve security performance?

The Market Monitor role, with the ability to investigate quickly, is an important part of a security of supply solution. This investigation needs to consider high prices, level of reserves across all fuel sources, use of discretionary hydro, and potential economic withholding of plant.

5. What approaches to scarcity pricing should be preferred?

Meridian prefers the 'pure' scarcity pricing model, using VOLL pricing only, during a situation where supply cannot match demand.

6. Do you agree with the outlined approach whereby the Commission will progress with a detailed proposal for a scarcity pricing regime and for a default buy-back arrangement? If not, what would be the best approach for moving forward?

Yes, the proposed approach for developing this work is appropriate. Meridian does note that the proposals are at a very high level, and at a very early stage. Clearly, the development of these options needs to be undertaken with care. We anticipate a long and detailed discussion over the detail of the options.

For example, Meridian has some early basic questions about the proposal for a price floor:

- Over which period will the price floor operate?
- If it is triggered early in the season, when will the price floor be switched off? It appears that there is the potential for perverse outcomes towards the end of the season whether the floor is switched off early or switched off late.
- What price does the price floor affect? That is, does the floor apply for every half-hour period, or is it an average price floor over a week or a month? If an average, how would prices around the average be calculated?
- How will generators offer and be dispatched? What will the effect of knowledge of the price floor be on offer behaviour?
- How would the floor be applied across islands and across nodes?

Conclusion

As noted in this submission, it is critical that the effect of any changes are carefully modelled so that the outcomes are clear. Advance notice to both the electricity industry, major electricity users, and all other stakeholders will be vital for managing the implications of any changes. Meridian recommends a two year notification of changes to VOLL as a minimum.

We have also noted that implementing any changes to market pricing mechanisms prior to the HVDC upgrade reaching full capacity could have dramatic and unmanageable effects on market prices, without achieving any security of supply benefits. Because of this, Meridian recommends any scarcity pricing mechanism not be implemented until the HVDC upgrade is at full capacity.

It is very important that optimal security of supply is delivered at least cost for New Zealand. Any decisions the Commission makes need to be based on economic cost benefit modelling to ensure that this is the case.

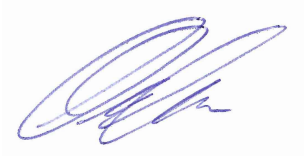
Of the options being considered, Meridian prefers pure scarcity pricing. If the Commission wishes to pursue modified scarcity pricing, Meridian recommends that the two options be developed in parallel, and the outcomes carefully modelled before a final decision is made.

It does appear that the scarcity pricing mechanism is being considered outside of the Commission's wider security of supply policy. It is critical that these are developed together, and that it is clear how the two will interact. For example, how will the scarcity pricing work with Whirinaki in the system, or out of the system? How will scarcity pricing interact with the Commission's hydro risk curves?

As the Commission is aware, any development of scarcity pricing policy needs to be undertaken in the context of developments in the Commission's transmission pricing, transmission hedging, development of a liquid hedge market, and broader government policy for electricity. Clearly this will include any possible changes that the government makes following the Ministerial Review of Electricity Market Performance.

Meridian will look forward to participating in future working groups, seminars and consultations on this topic. Please contact me if you have any questions on this submission.

Yours sincerely



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