Norske Skog Tasman

Submissions
Electricity Authority
Level 7, ASB Tower,
2 Hunter Street
PO Box 10041
Wellington 6143

21st April 2011

By email to submissions@ea.govt.nz

Consultation Paper—Scarcity Pricing – Proposed Design

Thank you for the opportunity to provide comments on the Consultation Paper — *Scarcity Pricing – Proposed Design* published by the Electricity Authority on March 28th 2011.

In our view the main elements of the proposed design are an unnecessary intervention which will result in market distortions and inefficient outcomes, increased hydro spill and increased wholesale market prices. Security of supply will improve, but at a great cost. There are better and cheaper ways to improve security of supply, and we advise the Authority to pursue those options.

We have tried to understand the cost benefit analysis provided in Appendix F of the paper, but have failed to make much sense of the little information that has been provided. The logic behind the benefits is based on a very simplistic diagram and assumes that forced curtailment of demand leads to inefficient investment in generation and demand response. Furthermore the paper assumes that floor pricing will alleviate these inefficiencies. We fundamentally disagree.

The only costs identified by the Authority are those incurred in software development. It appears that the Authority treats increased electricity prices as a wealth transfer. Our view is that increased electricity prices will reduce productive output and impose a real cost on the economy. The Authority regards price suppression due to demand response as inefficient. We disagree. Our view, which we think is in line with standard economic theory, is that demand curtailment in response to price will lead to competitive outcomes.

We contend that the threat of scarcity prices will increase hydro generators aversion to the risk of running their hydro lakes empty. They will hold their water for longer, which will admittedly increase security of supply, but at the cost of significant hydro spill and greater reliance on thermal generation. We note that this is completely at odds with the Government's environmental aspirations.

The Electricity Authority has not provided any modelling work to support its views. We decided to do some modelling of our own to test our assertions.

We have developed a stochastic dynamic programme (SDP), marginal water value model, in-house. It operates in the same fashion as models like SPECTRA, and SDDP (although we have a simple dispatch algorithm rather

Norske Skog Tasman Limited

Fletcher Avenue
Private Bag, Kawerau
New Zealand

Phone: +64 7 323 3999
Fax: +64 7 323 3157

than using a LP). We have not calibrated our model to the NZ system, but have used it to demonstrate the effects that any SDP will produce in the presence of a floor price of $500/MWh that applies when national storage falls below 10%. Please note that this is an arbitrary reservoir level chosen for illustration, and does not correspond to a 10% risk of shortage. The way we have configured our model generally results in thermal generation setting marginal water values.

The results of our modelling are shown in figures 1, and 2 (which is the same as figure 1 with the scale truncated).

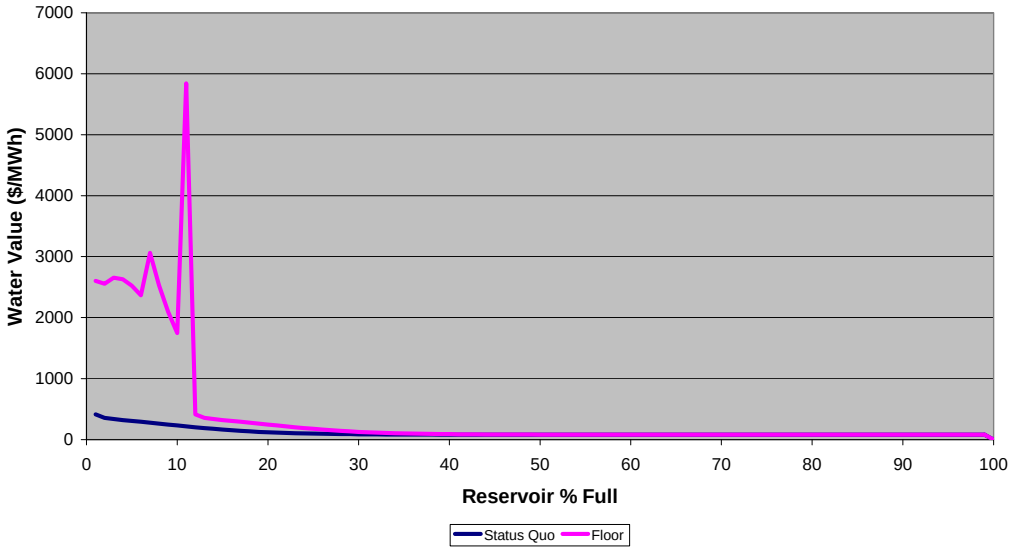

Figure 1 – Marginal Water Values with and without a floor price

Figure 1 shows a spike in marginal water value at 10% storage when the floor is applied. This arises because the floor price rule disturbs the overall system environment and creates a discontinuity in the cost to go function, at the level of 10% storage. The marginal water value (the slope of this function) becomes infinite at this discontinuity. To the best of our knowledge all SDPs will display this anomaly. We are not sure how generators will cope with this spike, and how they will alter their offers.

Also from figure 1 it can be observed that the water values when the storage is less than 10% are far in excess of the $500/MWh floor price that was applied. The reason for this relates to the marginal value of water, and the cost over future periods. With storage at 10%, the cost to go is $500 x number of future periods. But at 11%, the cost to go is (in our case) $82.50 x number of future periods. The marginal cost, being the difference between the two – is very high. Some might argue that this is an artefact of the model. But to the best of our knowledge this modelling technique is widely adopted in NZ to value water and compute offer prices by hydro operators. We have no reason to believe that these kinds of results will not translate into real (high) offers.

Without the floor price policy the cost to go function is convex, and marginal water values in the storage ranges less than 10% would reflect standby thermal plant and ultimately the curtailment cost to consumers. This is a far more rational approach than the arbitrary floor price intervention, and will lead to more efficient consumption and investment decisions.

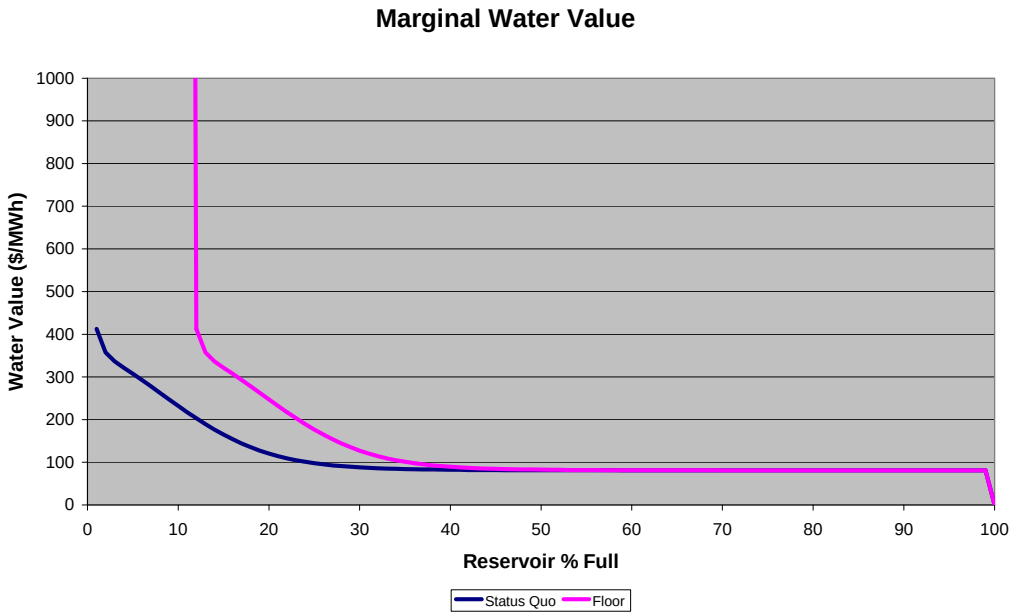

Figure 2- Marginal Water Values with and without a floor price with truncated axis

Figure 2 shows that at about 40% storage the marginal value of water with a floor starts to deviate from the status quo marginal water value. At 30% storage the difference is $30/MWh. At 20% storage the difference is $130/MWh. At 11% storage the difference is $210/MWh. We contend that these sorts of differences will translate into differences in wholesale electricity prices and are significant enough to not only curtail productive output temporarily, but will cause businesses to shift their operations overseas. This will be a complete tragedy for New Zealand.

We realise that scarcity pricing is a section 42 matter in the Electricity Industry Act 2010. We advise the Authority to report back to the Minister that upon careful consideration scarcity pricing was not found to provide benefits to consumers and the Minister's concerns that led to the proposal of scarcity pricing can be addressed by alternative arrangements.

We assume that the fundamental driver behind the proposal is to avoid frequent public conservation campaigns. This goal can be achieved by other means than abitrary floor prices as proposed. The Authority could contract with industrial plant to reduce load during periods of low hydro inflows. In our case we could hold higher levels of inventory so that we could be ready to stop consuming electricity at short notice. A contract with three or four businesses like ourselves would provide savings of 10% of national demand – which is more than could be

expected from a public savings campaign. We expect that the cost involved would be much lower than the cost incurred by NZ Inc due to the floor price policy.

Our answers to the Authority's questions follow:

Q1. To what extent is price suppression an issue with current pricing arrangements?

The only price suppression we know of is for a short while after under frequency events (as discussed on page 22 of the paper) and arguably due to the Whirinaki power station's offer price. Please note that we have provided the Authority with a submission concerning the Whirinaki offer price that we think addresses concerns of consumers and suppliers[1].

Q2. To what extent do you agree that the spot price suppression will adversely affect security of supply?

We will be interested to see what the Authority decides concerning the claims of UTS for March 26th. If the prices stand, there is a lot of missing money found in a few hours.

Q3. What is your assessment of historic security of supply performance, and the likely future performance under current arrangements?

NZ will always have security of supply problems due to the uncertainty in hydro inflows. Demand reduction contracts are a better way to manage these risks than building expensive stand-by generation.

Q4. What is your view of the proposed price floor to be applied in emergency load curtailment?

We don't think it is necessary. The normal operation of the market should set an efficient price, especially once dispatchable demand is in place.

Q5. What is your view of the proposed treatment of load curtailment in AUFLS events?

We agree that an AULS event should not trigger scarcity pricing.

Q6. What is your view of the proposed approach to pricing during IR shortfalls?

We don't agree with the proposed approach. If there is a valid reason for a high IR and energy price, then it should stand. If the high prices are due to instability in the LP basis matrix, then some relaxation of constraints may be required.

When IR is in short supply risk setting plant can be scaled back to reduce the reserve requirement. In the North Island it is possible that four risk setting plant could have the same energy dispatch set point – equal to the available FIR and

[1] Our proposal for Whirinaki is to retain an offer price at $5000/MWh, charge the levy to suppliers and calculate constrained on payments at fuel cost.

SIR. Thus 1 MW of either FIR or SIR would release 4 MW of generation. If this is the case then we would expect the FIR or SIR price to be a factor of four times higher than the energy price. This has nothing to do with infeasibility or ill-conditioned basis matrices. Prices established in these sorts of circumstances should not be adjusted.

Q7. What is your view of the proposed price floor to be applied in rolling outage load curtailment?

We do not agree that price floors should apply during rolling outages. Prices established by normal market mechanisms will lead to more efficient outcomes than arbitrary interventions.

Q8. What is your view of the proposed disclosure mechanism?

We oppose the proposed disclosure mechanism. We are surprised that the Authority would contemplate obtaining confidential information regarding participant's contract positions, and publishing this information to identify parties that would expect to benefit from public conservation campaigns. Before this proposal is adopted the damage to investor confidence must be considered in the cost benefit analysis.

Q9. What is your view of these possible financial mechanisms?

The Authority seems to believe that forcing parties to hedge will reduce their incentives to lobby for savings campaigns. The Authority does not seem to be aware that hedges are not always available at reasonable prices. Forcing parties to buy expensive hedges is a draconian policy that will simply drive production out of NZ.

Why should consumers who choose to be exposed to the spot market be penalised? Some choose to have spot exposure and manage the risk of price spikes by flexibility in consumption. This should be encouraged, not penalised! Demand willing to turn off in response to price will lead to more efficient price signals and more efficient investment.

Few consumers lobby for public conservation campaigns. There is no evidence that consumers who do lobby for conservation campaigns are un-hedged. They might be, but they might equally be concerned about increases in hedge prices in the future.

The conjecture in this section of the paper is flawed and unhelpful.

Q10. What is your view of the comparative merits of disclosure versus a spot price floor to address concerns about over-reliance on public conservation campaigns? Is there merit in pursuing both mechanisms?

Disclosure is an unwarranted imposition and would be seen in a very dim light by investors. We do not agree that price floors should ever apply. Prices established by normal market mechanisms will lead to more efficient outcomes than arbitrary interventions.

Q11. What is your view of the proposed approach to imposing a minimum geographic threshold before any scarcity price floor is applied?

We don't think scarcity prices are requiredm period. But if they are applied then we think it should be national, or none.

Q12. What is your view of the preferred approach to transition arrangements?

We disagree with the proposal so we do not support any transition arrangements.

Q13. What is your view of the proposed approach to review arrangements?

Any decision to proceed with this proposal will be unpopular and contentious with a significant number of consumers. An early review will help either vindicate those who oppose the proposal, or the Authority. An early review will allow a retraction of the proposal before too much time has transpired. However we believe it would be irresponsible for the Authority to proceed with dubious policy on some kind of trial basis pending review. This adds uncertainty to all involved. It would be much better for the Authority to abandon this proposal outright.

Q14. What is your view of the proposed changes when assessed against the Electricity Authority's statutory objective?

Our view is that when assessed against the Electricity Authority's statutory objective it is obvious that the proposed changes should be abandoned. Please refer to our discussion earlier in this submission.

Q15. What, if any, other reasonably practicable options should be considered?

Contracting with industrial consumers for demand reduction, as we have already explained.

Q16. What is your view of a capacity mechanism, when assessed against the Electricity Authority's statutory objective?

Yet another intervention that will lead to less incentive for suppliers to invest. We note that the two bullet points under para 220 are completely at odds with each other.

Q17. What is your view of the costs and benefits of the proposed changes?

The benefits are over-stated and the costs under-stated. Our view is that the costs will be far greater than any benefits and the proposed changes should be dismissed. Please refer to our discussion of costs and benefits earlier in this submission.

Q18. What is your view of the likely impact on prices of the proposed scarcity pricing changes, both in the near term (static effects) and over time (when parties can adjust their plans and behaviour)?

Short and long term prices will increase, without a doubt, under this proposal. Please refer to our discussion of water values earlier in this submission.

Q19. What further pro-competitive initiatives should the Authority be considering at this time?

The Authority should stop considering "pro-competitive" initiatives if this, consumer compensation, asset swaps, financial transmission rights etc. are anything to go by. The Authority must stop intervening in the electricity market - for the long term benefit of consumers.

Q20. Do you agree that the undesirable trading situation provisions could be invoked to address an exceptional event, and ensure that scarcity pricing is not applied in an inappropriate situation? If not, what changes should be considered in relation to the undesirable trading situation provisions?

Interesting question given the Authority is taking an extraordinary amount of time to make a decision concerning the claims of UTS for March 26th 2011. It appears that a UTS can be claimed and treated seriously by the Authority when a generator applies its own scarcity pricing policy. This really does seem incongruous given this proposal.

Q21. What is your view of price capping mechanisms, when assessed against the Electricity Authority's statutory objective?

We have not given price capping mechanisms much thought. In general we see price capping as an intervention, that is likely to have unhelpful consequences in the long term (by discouraging investment).

Yours sincerely,

Graeme Everett
Energy Manager

Norske Skog Tasman Limited

Fletcher Avenue
Private Bag, Kawerau
New Zealand

Phone: +64 7 323 3999
Fax: +64 7 323 3157