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Hedge Market Development – Issues and Options

Submission by Energy Link in response to the HMDSG's Overview Paper of 18 July 2006

1. Summary

We welcome the opportunity to make this submission on a market with which we are intimately involved on a day-to-day basis.

The HMDSG's set of recommendations represents the output of a long and detailed workstream and we acknowledge and appreciate the efforts of all members of the advisory group. While they would represent a positive move forward, at best they will not deliver any more than a modest incremental improvement to the functioning of the hedge market, and provide the basis for further work. But at worst they could allow the problems of the hedge market to continue to grow.

In formulating our submission we have referred primarily to the HDMSG's Overview Paper with some reference to the Technical Paper. Due to constraints on our time we have not been able to refer to all HMDSG papers and apologise in advance if we have missed anything significant. We have tried not just to be "knockers" but also to suggest alternatives for further consideration.

Mandatory disclosure of all contracts is a useful recommendation within the limits imposed by the HMDSG's policy objective of improving the functioning of the hedge market, and would improve the information available, with benefits as stated in the Overview Paper.

The only recommendation which addresses a key hedge market structural problem is that of allocating the losses and constraints rentals. The LRA is complex and involves potentially arbitrary choices around threshold prices. Like FTRs, the impact of loss rental rebates on hedging decisions will be complex and difficult to evaluate and implement, especially for purchasers. Worse still, it does nothing to address the underlying cause of uncertainties around relative location factors, the price differences between hedge reference and spot transaction nodes, and will only allow the problem of constraints and price spikes to get worse, not better.

The LRA proposal will provide limited refunds of prices paid by spot purchasers for import into constraint-affected regions of the grid but will not reduce the impact of the locally generated higher priced generation. We propose an approach which would use rentals to reduce the imperfections in the grid or grid operations which give rise to constraints – we propose a method in section 7.1.

The recommendation to "invite the owners of *EnergyHedge* to further develop its services" is disappointingly vague and the Technical Paper states that the objective of the development would be to further improve the forward price signals, and would not require it to be a widely used trading platform. *EnergyHedge* is already viewed by many with some skepticism *because* it is not widely

used. *EnergyHedge* does not meet the test for a 'robust forward curve' (defined in section 2) and until it does it can't really be taken seriously by the widest possible range of hedge market stakeholders.

Retailers are already using ISDA agreements (more specifically Schedule to the ISDA) which are more or less standard. Unless the model agreement is made mandatory then anyone transacting under a new "model" hedge agreement will need to read it thoroughly before signing, and therefore incremental reductions in transaction costs will be minimal.

We do not support making the model master agreement mandatory as that would prevent efficient bilateral contracting. The best way to lower transactions costs is to establish a market for a small number of standard contracts traded on some form of exchange. This has been tried before by the SFE and failed, and to produce a liquid exchange traded hedge market would almost certainly require some major structural adjustments to the market.

Since hedges are financial derivatives, the model master hedge agreement can only be used alongside an agreement for physical supply at spot price. We observe a number of different approaches to these contracts, so that the whole package (supply + hedges) must always be considered. Ideally, forms and terms of supply agreements should also be standardised so that hedge markets participants can have confidence that they can, if desired, source supply and risk management separately without paying excessive premiums for this privilege.

Improved publication of fuel-stock and outage information is a useful initiative but falls far short of ideal requirements. Only a minority of market participants are subject to NZX disclosure rules so hedge market participants may learn of key developments like new generation projects long after hedges have been traded around them.

Like a game of Poker, the hedge market participants play a hand according to the cards (or information) that they have in hand. Bets (transactions) occur when participants feel that they have sufficient cards (information) to give them a fair chance of success. Market participants can use professional advisors or brokers to assist them to match the generators-retailers at the poker table, but as long as the generator-retailers do not have to disclose how many cards they have access to (for example, their hedge position, status of their plant, fuel availability), then the purchasers will have to assume that hedge contracts will always have a significant cost to them over the long run.

Such circumstances do not, and can not result in a robust hedge market, however it is defined.

As the leading provider of training for the hedge market (ELRisk1 & ELRisk2 courses run three times a year) we know how little interest there is from the majority of purchasers in attending training, although the level of interest has grown slightly in the last 12 months. We would support any initiatives to improve the awareness of the benefits of attending courses, but it will take time, and some real improvements in the hedge market, to convince many consumers that electricity supply should be treated as anything but a procurement activity based, preferably, on FPVV contracts.

Regular surveys are useful but a little pointless if every year they tell us "the market is not working as well as it should." Purchasers in particular will become cynical about surveys unless real progress is made.

Finally, the group's final output largely ignores, and fails to address in any meaningful way, the fundamental reasons why the hedge market is not a liquid market in its current form, these being:

uncertain inflows, vertical integration, relative size of hedge market participants, an imperfect grid, conditions on spot supply contracts, and the interactions between the spot and hedge markets.

Our submission is structured around the specific questions asked in the overview paper followed by a brief section on EnergyHedge.

2. Policy Objectives

The Group defined its policy objective as promoting a well-functioning hedge market. By contrast, the GPS policy objective for the hedge market is to improve transparency and liquidity. The Group questions whether liquidity is a goal in itself, and the extent to which it can be achieved in the New Zealand context. Do submitters agree with the Group's policy objective? Do submitters agree with the Group's policy objective? If not, please outline what you consider the policy objective should be.

As far as we are aware, there is no standard definition of a 'liquid market', but commonly available definitions have one or more of the following characteristics. In our training courses we define market to be liquid when:

1. trades can be made easily and readily;
2. individual trades do not significantly affect the price of immediately subsequent trades;
3. forward prices (of traded contracts) are readily available to any person wanting to trade on that market.

By this definition a liquid market also has a high degree of transparency, at least as far as the prices and volumes of contracts traded on the market are concerned.

A liquid market does not necessarily require a very large number of trades per unit time, but if trading volumes fall below some threshold then at least criteria 1 above will not be met and 2 will be in danger of being violated.

A forward curve is simply the graph of the prices of forward dated contracts, such as electricity hedges, plotted against time to maturity. Any forward market has a forward curve but in our hedge market training courses we refer to the forward curve arising from a liquid forward market as a 'robust forward curve'. A robust forward curve is significantly more useful to would-be hedgers than just any old forward curve – for example, it allows hedge contracts to be marked-to-market (which simply means valued) at any point in time.

The fundamental question to ask is – can a hedge market be functioning well but not liquid?

If trades can not be made easily and readily then it is doubtful whether the market is working well – since it might fail to trade at times, even though there are would-be hedgers willing to trade. So condition 1 is necessary for a hedge market to function well.

When a robust forward curve is available to a market then market participants will still refer to other sources of information about future prices of the underlying asset or commodity, e.g. forecasts (their own, industry or independent forecasts), some form of technical analysis (e.g. trending) or to market 'fundamentals.' If forward prices are not readily available to hedgers then they must rely on these other sources of information – but even then the market could conceivably still be working well.

It is possible to imagine a market in which individual trades do 'move the market' yet the market is still functioning well. For example, it may be that forward prices are known to tend to move in a particular way after larger trades. However, if forward prices move significantly due to a lack of competition in the forward market then these movements could be highly unpredictable and could also impact on the willingness of would-be hedgers to make trades, thus impacting on the overall ease with which trades can be made.

To conclude, a market could be working well even if not liquid. A market that is liquid, by our definition, will be working well and will be transparent. An illiquid market that is considered to be working well should at least allow for trades to be made easily and readily and there should be enough information available about forward prices and future expectations to support hedgers.

Tech Paper paragraph 213 states that "the HMDSG identified four fundamental elements for a well functioning risk management market:

a. a competitive underlying physical market;
b. sound rules and standards;
c. appropriate infrastructure, covering both technical and human factors; and
d. high quality information and efficient information flows."

Since the group abandoned the more stringent criteria of a liquid market, we are not convinced that the four elements listed above are sufficient for the 'well functioning' hedge market. In particular, we are not convinced that developing elements a through c listed above will lead to trades being made easily and readily.

For example, the underlying physical market may be competitive but does this guarantee that the derivative hedge market is competitive? If the hedge market is not competitive in its own right then trading could be limited and prices could be manipulated. Neither the Overview Paper nor the Technical Paper address this particular issue satisfactorily, in our view. We would like to have seen more consideration given to potential solutions to underlying structural problems, the solving of which might lead eventually to a liquid market.

2.1. New-entrants

A less obvious issue around the policy objective, is that of barriers that new-entrant retailers and generators face in the hedge market. We are aware of a number of apparently beneficial generation prospects developed by small would-be generators, for whom hedging the output remains a significant and largely insurmountable barrier, especially as the option of also becoming a retailer requires the development of two new businesses, not just one. Becoming a retailer also entails high fixed costs, due to the current set of EGRs developing around the potentially flawed assumption that "retailers must have scale."

While there is already a high level of competition to be the builder of the next generator, despite vertical integration, the structure and illiquidity of the hedge market nevertheless reduces the potential pool of beneficial generation proposals able to be brought to market.

Due to illiquidity in the hedge market, new-entrants are more often than not forced into negotiating with one or more direct competitors, i.e. one of the vertically integrated generator-retailers[1]. While

[1] This is not to imply that generator-retailers are being anti-competitive in any way. However, it can be hard to tell how much of this hedging activity is based on pure commercial incentives and how much is based on a sense of the public good.

there is the potential for hedging directly with purchasers, the feasibility of this approach is significantly curtailed by the lack of purchasers in the hedge market who are in the market for hedges at the right time, and who are large enough to absorb a significant portion of a new generator's output. A fully liquid hedge market would remove this potential barrier and promote further competition in the generation sector. In this case the policy objective for HMDSG should definitely be GPS objective of a liquid hedge market (which would also lead to transparency by our definition of a liquid market.)

Would-be new retailers face an even tougher task because, unlike would-be generators, their business does not require the acquisition of high-value and long lived assets which can assist in securing capital. Given current margins[2] in the retail business any merchant retailer would require a high level of hedge cover at a competitive price to reduce working capital requirements to a level which would deliver a return on investment commensurate with the risks faced by such a retailer. A liquid hedge market would provide would-be retailers with an effective way to manage spot market risks. A "well functioning" hedge market as envisaged by the HMDSG almost certainly would not.

2.2. Policy Summary

While implementing the HMDSG's recommendations could help the hedge market function well in a limited sense, improving on the market as it is today, ultimately liquidity is required to achieve the wider benefits implicit in the GPS, especially when it comes to lowering barriers to the entry of new generators and retailers. The HMDSG's objective for the hedge market falls significantly short of the objective expressed in the GPS. If the objectives of the GPS are to be met then the hedge market will need to meet our three criteria for a liquid market listed in section 2.

We note at this point, however, that the changes required to get the hedge market to be fully liquid would almost certainly require significant changes to the structure or operations of the current set of generator-retailers. In our opinion it would have been unrealistic to expect the HMDSG, under its original terms of reference, to have tackled changes of that scope and magnitude.

3. Key Problems

Has the Group correctly identified the key problems relating to risk management in Section 6 of this Overview Paper and Section 3.3 of the Technical Paper? If not, please outline what you consider to be the problems.

The Technical Paper lists five key problems with the hedge market:

1. Lack of robust information;
2. High participation and transaction costs;
3. Lack of confidence in the competitiveness of the risk management market;
4. Lack of suitable mechanisms to manage location price risk;
5. Lack of understanding of electricity risk management.

In our opinion this list is far from complete, and misses some of the key structural issues which act to reduce liquidity in the hedge market[3]. Our list of structural issues is:

1. uncertainty around hydro inflows combined with the lack of a capacity market;

[2] Our analysis suggests that margins in the retail business have only just reached a point at which they match total retail costs per customer, including return on investment.

[3] Although many of these are mentioned in the Technical Paper.

2. vertical integration of retail and generation;
3. relative size of hedge market participants;
4. imperfect grid;
5. conditions on contracts for physical supply;
6. the dynamic interaction between the spot and hedge markets.

3.1. Inflows

A hydro retailer-generator in NZ has a particularly high risk associated with being over-hedged in a dry year, in which case they would be buying out of the spot market at high prices to supply fixed price retail and hedged load in excess of their dry year generation. As a result there is a tendency for hydro-based market participants to hedge well below their expected capacity, thus reducing the overall volume of hedges available to the hedge market.

Although there exists the ability to contract for capacity, in a financial sense, to cover dry year risk, there does not appear to be much of this going on. Generators that can count on spare capacity in dry years appear to have a tendency, and certainly have strong commercial incentives, to be free to run during those events with the consequent positive impact on their profits.

The impact of uncertainty around inflows, combined with a lack of formal arrangements for hedging of dry year capacity, leads to an unsatisfied demand for hedges.

3.2. Vertical Integration

NZIER's report on International Best Practice, August 2005, presents evidence which demonstrates the negative impact of vertical integration on hedge markets, including markets for forward and futures contracts.

Vertical integration wiped out the majority of the large hedge market that existed prior to 1998/99 and the passing of the Electricity Industry Reform Act. It remains the single largest impediment to the development of a liquid hedge market.

3.3. Relative Size of Hedge Market Participants

If we now remove Comalco, accounting for 14% of the nation's electricity demand, the volume available for the hedge market shrinks further.

Aside from the unique characteristics of Comalco, there is also a great difference between the size of retailer-generators and purchasers. One consequence of this is that purchasers often face a situation in which, to get the lowest possible hedge price, hedges on offer are tailored to match the purchaser's total unhedged volume. The consequence of this is that hedging decisions tend to be made infrequently and for relatively large volumes each time.

From the purchasers' point of view, assuming a willingness to manage their 'hedge book' in return for a more flexible and cost-effective supply strategy, a better approach is to use an active hedging strategy and build a hedge book in "tranches" on a rolling basis, thus avoiding having to buy large hedge volumes at times when the hedge price is high. For example, a 10 GWh per annum purchaser might like to hedge long term for 0.5 MW, medium term for another 0.5 MW and then top-up with hedges in the short term. This strategy also reduces the chances of being stuck with excess hedges if consumption falls below expectations at a later date. This strategy can be very difficult to implement at times when such small volumes for short to medium periods may be expensive or simply not available.

3.4. Imperfect Grid

The HMDSG identified the inability to hedge location basis risk as a key problem in the hedge market. We agree that location basis risk is a significant barrier to hedging but this is not the real issue here – ultimately, a strong grid is required to make both the retail and hedge market function well.

3.5. Contracts for physical supply

If a purchaser signs up to a full FPVV then this contract eliminates exposure to the spot price and also encapsulates an agreement for the retailer to supply electricity at a specified point or points.

But the majority of true hedge contracts written in the hedge market are financial contracts and do not include physical supply. In order to follow a hedging strategy a purchaser must first enter into one or more contracts for physical supply at spot price. While standardisation is in progress for model hedge agreements, the same can not be said for contracts for physical supply from the spot market. Often the considerations around physical supply interact with and may even override considerations around hedging, acting to reduce the volume of hedges traded.

But for the hedge market to work well, purchasers need to have some assurance they can take physical supply separately from their hedges. We believe there must be standardisation in both physical supply and hedging contracts to further reduce transaction costs, but more importantly to reduce barriers to trading hedges. There may even be an argument for creating a new type of EGR participant that can purchase from the spot market direct at spot price without meeting the full requirements for retailers.

In the days of the NZEM, alternative arrangements for supply were possible by trading under the MARIA rules. Smaller players, for example, could set up their own trading hubs and integrate supply from a number of sources. Having to transact all sales through the spot market under the existing EGRs has made this type of strategy more expensive for smaller players and tilted the 'playing field' further in favour of the large, vertically integrated market participants.

3.6. Interaction between the spot and hedge markets

In principle, the price of a hedge at the time it is written should be equal to the expected spot price at the relevant GXP or GIP at the date of maturity. This is often not the case, for a number of reasons, but key amongst these is the impact that hedging has on offers made into the spot market.

Paragraph 38 states that "The wholesale market has been designed to encourage generators to offer at their marginal costs which do not include their fixed costs, and prices are set on the basis of the marginal cost of the last generator dispatched."

This statement expresses a common misconception about our spot market, one which we have often clarified as we will here.

If this were correct, given that hedge prices tend to reflect expected spot prices, then generators would be hedging at prices insufficient to recover total costs and they would all be losing money. While many offers into the market may be at or below SRMC, there is no mechanism for generators in our market to recover fixed costs separately, therefore all costs are effectively signaled in spot prices, at least in the longer term. The spot market was designed to ensure that LRMC is signaled, thus promoting efficient investment in new generation.

Returning to the main issue of this section, however, it is an important result of spot trading theory that a generator will tend to structure their offers[4] so that total retail load plus hedge contracts is offered at short run marginal cost, e.g. fuel costs in the case of a thermal generator. If hedge cover in the market is generally very high, then all plant will be offered at short run marginal cost and spot prices will tend to fall below long run marginal costs and hence also below hedge prices. If this continues long enough then hedge buyers will see a large risk premium in hedge prices and will tend to reduce hedge cover, since it will appear to them to be cheaper to "go spot" than to hedge, which will result in spot prices rising toward LRMC once again.

It does not require all spot market participants to be highly hedged as we believe that even one large hedge in the market, between two generator-retailers, combined with other factors such as take-or-pay gas contracts, could lead to risk premiums for significant periods.

The point here is this – notwithstanding the inevitable oscillations in the relativity of spot and hedge prices that offer strategies can introduce, our market will naturally tend to settle significantly below 100% hedge cover, thus further reducing the potential volume trading in our already illiquid hedge market.

3.7. Key problems summary

The hedge market is illiquid due to the underlying characteristics of the physical, institutional and commercial structure of our wholesale electricity market, including imperfections in the grid. Ultimately, a number of these characteristics need to be addresses directly if the hedge market is ever to be considered a liquid forward market.

4. Evaluation Criteria

Do you agree that the evaluation criteria outlined in Section 7 of this Overview Paper and Section 4.2 of the Technical Paper are appropriate criteria for assessing the initiatives? If not, please outline the evaluation criteria that you consider more appropriate.

No comments to make.

5. Potential Initiatives

Do you consider the Group has correctly identified and described an appropriate range of potential initiatives in Sections 6 and 7 of the Technical Paper? If not, please outline any additional initiatives you believe the Group should have considered.

No comments to make.

6. Preferred Package

Do you agree with the preferred package described in Section 8 of this Overview Paper and Section 8 of the Technical Paper? If not, please outline the initiatives you consider are more appropriate and describe the benefits they deliver, with particular reference to the policy objectives.

As described in section 2 the HMDSG's objectives do not align with the objectives set out for the hedge market in the GPS. If we were to accept the HMDSG's objective then we would add to or modify the preferred package as follows:

1. losses and constraints rentals used to reduce surplus at source – refer to section 7.1;

[4] This is a simplification as we have left out many important considerations such as how must-run plant is offered.

2. development of a model master physical supply agreement to work in tandem with the model master ISDA hedge agreement - refer section 3.5.

If, however, the objectives in the GPS were accepted, then a radically different package of initiatives would be required, including:

1. reducing the impact of vertical integration through measures such as corporate separation of retailers (e.g. from generation, lines or other) or detailed disclosure rules;
2. development of an exchange traded set of forward and/or futures contracts at key nodes;
3. losses and constraints rentals used to reduce surplus at source – refer to section 7.1;
4. development of a model master physical supply agreement to work in tandem with the model master ISDA hedge agreement – refer section 3.5.

6.1. Vertical integration & exchange trading

Given the structural issues listed in section 3, the three criteria for a liquid hedge market listed in section 2 will have the greatest chance of being met (and probably the only change of being met) if the widest possible range of hedgers are participating in the hedge market. If retailers were required to reside in separate legal entities, thus requiring separate financial accounts, and regardless of their ownership, then it is relatively easy to enforce mandatory disclosure rules, and perhaps also mandatory trading rules, for all or part of their hedge book.

Alternatively, a regime requiring full disclosure by generators of their hedge commitments, plant conditions, outage schedules, potential problems, catchment snow pack and similar key information, would provide would-be hedgers with much greater confidence in their hedging decisions. All disclosure should be released to the market at the same time as to the retail arm of the generator-retailer market participants.

Generators could also be required to offer hedges on a quarterly open tender basis in quantities of 0.5 MW - 20 MW in quarterly tranches at their GIPs and using the model master hedge agreements or exchange traded contracts. Their retail arm could then be free to purchase those hedges and actively trade their net exposure. The companies could still manage their overall corporate risk profile and the retailers trade on the same basis as everybody else.

Along with undoing the impact of vertical integration would be the need for an exchange traded suite of standard contracts at 2 or 3 reference modes which would provide an alternative to the OTC market and promote market-making and liquidity.

7. Contract Disclosure and Rentals

The Group identified two initiatives in the preferred package that, in its view, would make the biggest difference in improving existing market arrangements: disclosure of contract information and changing the allocation of loss and constraint rentals. Please describe your views on the practicality and acceptability of these initiatives.

7.1. Rentals

We acknowledge the attractive features of the LRA proposal. However, the real issue is not how to distribute the pool surplus but how to reduce the surplus at source. We believe there are many ways that this could be achieved.

In the first instance, we note that many of the most 'notorious' examples of constraints occur due to very short term and infrequent, perhaps even unique, outages.

7.1.1. Outages

If a short term outage causes a constraint on a line leading to significant price separations, then we believe these questions need to be answered:

Was the modelling of the constraint accurate?

We constantly notice trading periods where a constraint is indicated via final prices but the power flow on the constrained line is less than its limit. Now we are unfortunately constrained in our analysis because we do not have access to the SPD demand data and have to use SCADA data or GXP Global data, but nevertheless we believe there are many periods when final prices do not fit well with what actually happened on the grid.

The second aspect of the accuracy of constraints, as pointed out by HMDSG, is that constraints produce what appear to be binary pricing effects – either there is no price separation or there is a large price separation. This is a feature of the current specification of the SPD model and it underlines the need for the modelling of constraints, and the linkage between dispatch and final pricing, to be as accurate as possible. This is a matter that is being addressed concurrently, in part, by the WMAG with respect to the spring washer pricing effect. Ultimately, high accuracy combined with line constraints that bind progressively might significantly reduce the occurrence of constraints due to grid outages.

Could the outage have been conducted at a better time?

Many outages are scheduled at times in which constraints are likely. Transpower has no direct incentive to minimise the impact of short term grid outages on the spot market, so it is no wonder that these occur as frequently as they do. Thorough preparation for co-ordination with the spot market, plus flexibility in when the outage actually occurs, could conceivably eliminate most of the price spikes due to short term outages.

Is the information available about the outage accurate and timely?

Although things have improved over time, we have noticed many occasions when the constraint data available on TPIX has been inaccurate with respect to timing of outages. The constraint data on TPIX is also only available in an unwieldy format, although this will hopefully improve when the new TPIX (EMSIX) is deployed some time in 2007.

If the timing and nature of the constraint is not available on an accessible database well in advance, and the information kept up to date and accurate in real time, then short term outages will continue to catch the market unawares.

Does the benefit of providing the spot price signal outweigh the negative impact these short-term infrequent outages and price spikes have on retail competition and the hedge market?

We do not dispute the enormous advantages of dispatching with a tool such as RTD in order to minimise the cost of serving demand and preserving short term security. But we seriously question how short term infrequent price spikes due to outages give any signal of lasting value to the market, other than ensuring that generators dispatched out of merit order can be paid from spot revenues. At best, the pricing signal creates the opportunity for demand to respond - but we all know that real-time demand response is very limited so all that happens is that more expensive generation is dispatched instead. The spot market also has constrained-on payments to compensate any generators which are dispatched at a node at which the final price is less than its offer price.

7.1.2. Longer term constraints

History has shown there are a number of ways that longer term limitations on grid capacity can be alleviated in a relatively short time frame, without having to invest in major grid upgrades. Examples, include inter-trips on generation which instantaneously reduce loading on lines, and the re-tensioning of existing lines to reduce sag.

Longer term limitations on grid capacity may require major grid upgrades, or building of new generation in the constrained regions, but we believe there are many short to medium term ways that constraints could be alleviated if the incentives and funding were in place.

7.1.3. Hedging strategy and retail competition

It is easy to show for a hedge which is bought or sold at a node which is distant from the spot purchase or sale node, respectively, that a perfect hedge is obtained when the hedge quantity is adjusted by the relative location factor.

The difficulty we have at present is that the location factor is often highly volatile, making this strategy risky and driving hedge market participants toward buying or selling hedges at spot nodes, which often leads to a substantial risk premium on the hedge price.

Would rebating rentals make this strategy any easier? The simple answer is no as it would add an additional level of complexity to the calculation of expected location factor. If one were to rely on historical location factors, as many unwisely do, then from this would have to be deducted the contribution due to line constraints over the LRA threshold. Forecast location factors would also need to be decomposed into their loss-created and constraint-created components. While the tools and services for analysing and forecasting these quantities are available, it would make the hedge market more complex, working against the HMDSG's and the GPS's objectives.

Exactly the same reasoning can be applied to the retail mass market – the LRA proposal would make retailing more complex than it is now.

7.1.4. Rebating rentals

The proposed LRA would, in principle, rebate rentals to those impacted by price separations due to constraints. But major surpluses are only generated on imports in to the constrained region – local generation would be paid for at the higher price. The LRA proposal will not eliminate constraints and in the long run may actually make the problem worse by lulling market participants into a fall sense of security due to gaining some temporary relief.

Solutions to persistent constraints should ideally come from the most efficient source, including grid upgrades, new generation, inter-trips or links between grid and generation, and so on. That is not to say that the most efficient outcomes are already occurring, but the LRA proposal will give money back to generator-retailers which could bias these solutions toward new generation.

7.1.5. A better solution

Rather than rebating rentals, we believe that rentals should be used to solve the problems at source. The total rentals should be made available on a competitive basis to Transpower and anyone else who can deliver projects which reduce the occurrence of constraints, or even losses, and hence reduce the rentals at source.

Rentals left over could be used to pay related market costs such as those constrained-on payments which are due to a mismatch between final price and generator offer price.

It can be shown that the benefit[5] in the spot market of a project which changes power flows on the grid, and in turn reduces rentals, is simply the reduction in the total rentals generated. So the economic cost-benefit test for these projects would not only be relatively straightforward in terms of modelling, but the modelling itself should produce an output which is equal to the expected benefit in terms of the increase in aggregate economic welfare.

Projects would be proposed by Transpower and others, submitted to the cost-benefit test (perhaps a modified grid investment test) and funds paid out to approved projects.

In all of this, we need to keep the goal of achieving a strong grid to facilitate retail and hedge market competition – in our view allocating rentals to projects which reduce rentals is the solution which achieves the greatest benefit in the long term.

Projects that might qualify for funding from rentals are alluded to in preceding sections and include:

- improving processes for planning, notifying and undertaking gird outages;
- improving the accuracy of market models and processes;
- paying for very short term mismatches between dispatch and final prices through the constrained-on payment mechanism;
- inter-trips between grid and generation;
- new or upgraded lines;
- new generation intended to provide capacity only, e.g. a diesel fired generator that runs only when a line is near its constraint limit.

7.1.6. Existing rentals distribution methodology

The existing methodology distributes the AC rentals to networks, some of whom distribute it to retailers. In the short term, using rentals to fund rentals-reduction projects may cause either lines or retail tariffs to increase in some areas. The rentals are currently running at about 2.5% of total spot purchases. However given the extreme volatility of the rental rebates we would doubt that these are all refunded, for the simple reason that they are difficult to forecast. If there was to be any impact on lines or retail prices in the short term then we believe this would be no more than about 1% of the energy component of a typical electricity invoice, equating to about 0.4% of a typical residential bill.

7.1.7. Rentals Summary

We believe the LRA proposal will provide the illusion of some relief from the impact of constraints on prices and location factors. Ultimately it will only allow the situation to get worse. A better approach is to use the rentals to fund projects which directly reduce the rentals at source. In the longer term this has the potential to improve market processes, reduce the occurrence of constraints, reduce the complexity of the retail and hedge markets, and ultimately make the retail and hedge markets more competitive and the hdge market more liquid.

7.2. Contract Disclosure

Given the HMDSG's policy objective, the proposal makes a lot of sense as the trading information currently available is sparse. But it can not be seen as anything more than an attempt to fill the gaping hole created by the non-existence of a liquid hedge market.

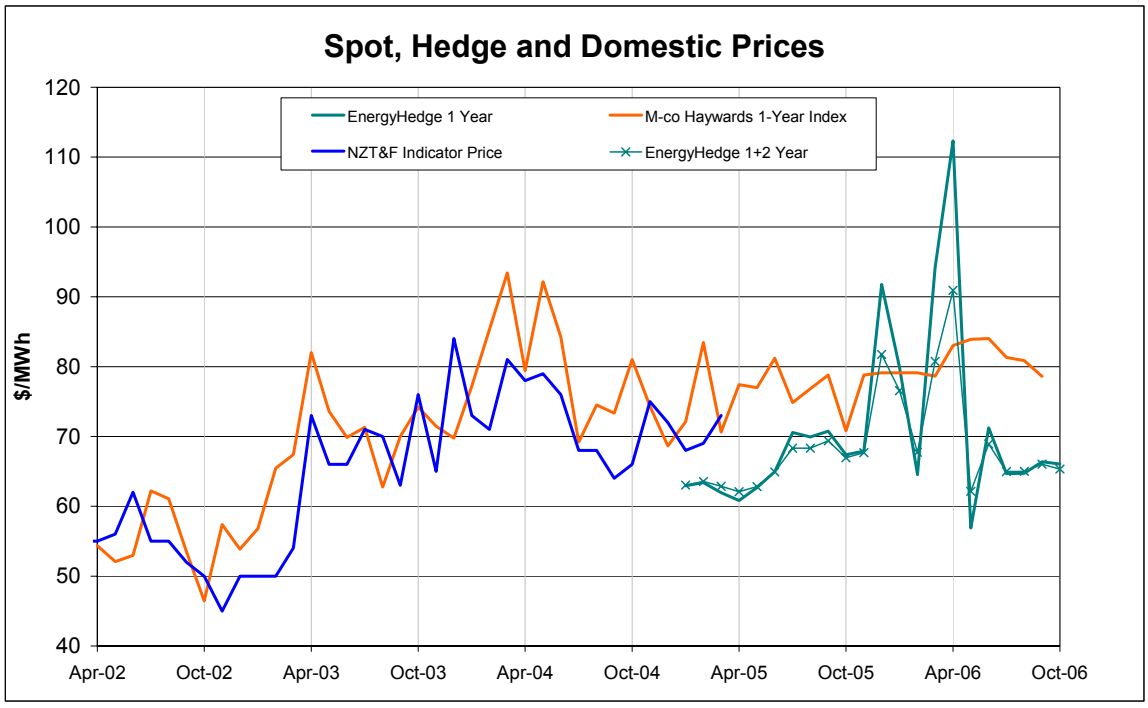
[5] In this context the benefit is the reduction in the total of the producer and consumers surplus, which is in turn the increased in economic welfare.

8. EnergyHedge

Tech paper paragraph 492 "The primary aim of this initiative is to develop the existing EnergyHedge platform to grow the market's confidence in the robustness and efficiency of EnergyHedge's forward price curve, rather than necessarily increasing the number of participants trading on EnergyHedge. The initiative would not need to develop EnergyHedge into a widely used trading platform in order to be considered a success."

We have a basic problem with the credibility of EnergyHedge and we fail to see how the market can have confidence in a forward curve from a hedge market which severely restricts direct access.

The following chart shows the 2 year average forward price from EnergyHedge, the M-co Hedge index averaged over 1, 2 and 3 year contracts, and the Haywards indicator price which has either been published or otherwise made available by NZ Tariff and Fuels.



M-co's hedge index is based on fixed price contracts which can be either variable volume or hedges. It is a rather sparse index, especially for 1 and 2 year contracts. The NZT&F indicator price reflected contracts they were involved with, referenced to Haywards. Over time the M-co and the NZT&F indices match up reasonably well – EnergyHedge appears to be the odd one out. It is not at all clear why EnergyHedge should trade on average at a significant discount to other contracts. EnergyHedge participants must offer and bid with a maximum 10% spread, so maybe the lower priced contracts tend to clear. EnergyHedge has only hedge contracts whereas the other two contain an unknown number of FPVV contracts, the latter tending to trade at a premium above the hedge price. EnergyHedge closing prices exhibit more volatility than the other two indices over the same period, so maybe EnergyHedge contracts (being only 0.25 MW in size) are used for shorter term trading.

Whatever the reasons, the data shown above can hardly create much confidence in EnergyHedge's claim that it will provide a robust and efficient forward curve when it does not match prices in indices based on data about contracts traded with purchasers. In our view, it is simply not credible to claim that EnergyHedge could be developed in this regard without it being a widely used trading platform. EnergyHedge has a role, but only if it makes a commitment to opening it up to any of the

10 GWh pa and above purchasers, would-be generators and retailers, who meet minimum credit requirements, without the onerous requirement to bid/offer with a maximum 10% spread, a strategy normally only the preserve of market-makers and not of pure hedgers.

8.1. Development of EnergyHedge

While we continue to be sceptical about EnergyHedge as long as it remains the domain of an exclusive club of market-making retailer-generators, we would support (in addition to opening it up for general non-market-making trading) the development of products such as strips. In addition, and for as long as location factors remain highly uncertain, there needs to be one or two more trading nodes added, e.g. Benmore and Otahuhu.