Enhancing trading of hedge products

Decision paper

8 December 2015

Decision

The Authority will pursue development of a cap product as a primary priority

1 On 9 June 2015, the Electricity Authority (Authority) released a consultation paper: "Hedge Market Development: Enhancing trading of hedge products" (consultation paper). After considering submissions, the Authority has decided to pursue developing an electricity price cap derivative (cap product) as a priority.

2 To this end, the Authority will work with interested parties over the next six months to identify an appropriate cap product design and trading platform, and to facilitate trading.

3 The Authority considers that developing a cap product is an important next step for the hedge market. A market with robust and regular pricing of standardised cap products is likely to have wide-ranging benefits. In particular, it would provide price signals to assist parties in making efficient decisions about asset investments. It would also have benefits for retail competition and end use consumers, because it would support the development of more robust and regular trading in other risk management products, and be a valuable risk management tool in its own right.

4 There are various options available to develop robust and regular pricing of standardised cap products. The Authority does not expect that introducing mandatory market making obligations would be the option with the greatest net benefits. It is likely that the industry could achieve most benefits from a cap product from voluntary developments. The Authority will therefore pursue these in the first instance.

The Authority will consider whether and how to pursue further hedge market development of existing ASX products as a secondary priority

5 The Authority considers it worthwhile to assess whether and how to pursue further development of baseload and peak NZ electricity derivatives on the Australian Securities Exchange (ASX NZ market). However, doing so is necessarily a second priority at this time. This is because:

(a) incremental improvements will support more active trading and build confidence. Specifically, the Authority intends to help facilitate voluntarily developments of two initiatives that have broad support amongst stakeholders, being:

(i) publishing metrics on the extent of market making on the ASX NZ market

(ii) an extension in the length for which the monthly baseload product on the ASX NZ market is listed, and in the associated market making arrangements

(b) the benefits of robust and regular pricing of standardised cap products are clear and compelling, and the Authority's primary focus should be on that development

(c) while the development of a cap product proceeds, the resource to consider whether and how to proceed with further developments for the baseload products will be required for the development of the cap product

(d) existing ASX NZ market products are performing increasingly well, and we could expect further enhancements to provide more active trading in these products

(e) in the future the Authority can take the learnings gained from paragraph 5(b) above, and potentially apply these to further developments of the existing products.

6 The Authority will therefore assess whether and how to proceed with developing the baseload products when resources become available.

7 The Hedge Market Development Project will progress throughout the 2015/16 year, and is a priority 1 project on the Authority's work programme.

Contents

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Background

Introduction

8 The Authority is an independent Crown entity responsible for promoting competition in, reliable supply by, and the efficient operation of, the electricity industry for the long-term benefit of consumers.

9 The consultation paper discussed proposals to enhance trading of contracts for managing electricity spot price risk (hedge products), with an emphasis on developing the trading of hedge products on the ASX NZ market.

10 This paper (decision paper):

(a) considers the feedback the Authority received in response to the consultation paper

(b) outlines the Authority's decisions on the proposals it put forward

(c) explains the reasons for each of its decisions.

11 This paper also addresses two other work streams within the Hedge Market Development project:

(a) The Wholesale Advisory Group (WAG) investigated opportunities to further develop the hedge market, to maintain its momentum, and develop its value to the wholesale and retail markets. The WAG has completed its investigation, and presented its recommendations to the Authority Board in June 2015.[1]

(b) The Authority has been evaluating whether participants could feasibly use ASX positions to offset energy market prudential security requirements. That work is ongoing.

12 As essential background to support the understanding of the issues discussed in this paper:

(a) Four generator-retailers currently support trading of hedge products on the ASX NZ market. These parties post prices at which they are willing to both buy and sell such products during a half hour trading window each trading day. They are called 'market makers', and their activity is called 'market making'.

(b) Market makers will sell at a price that is higher than the price at which they are willing to buy. The difference between their buy and sell prices is called the 'bid-offer spread'.

(c) Each of the four market makers has voluntarily signed a separate agreement with ASX to undertake their market making activity. Under these agreements, the four market makers post buy and sell prices for a selection of the products that are available on the ASX NZ market. This selection currently includes hedge products that relate to a flat electricity profile (termed 'baseload' products) over a month, and over a calendar quarter.

[1] See http://www.ea.govt.nz/dmsdocument/19646.

The Authority proposed further analysis into four developments

13 The consultation paper discussed several aspects of the arrangements for market making, including the parties involved in providing market making, the nature and terms of the market making agreements, and the products captured by those agreements.

14 The consultation paper proposed that the Authority would further analyse options to:

(a) create market making arrangements that the Authority could more strongly enforce (phrased as "more authoritative" market making arrangements in the consultation paper)

(b) publish metrics on the extent of market making

(c) bring about changes to the market making arrangements to encourage more active trading in the baseload products on the ASX NZ market

(d) introduce a half-hourly settled price cap product onto the ASX NZ market, and arrange for a party to regularly post prices to buy and/or sell that product to support trading.

15 The consultation paper considered investigating the introduction of market making for the peak futures products and quarterly options products that are currently available to trade on the ASX NZ market[2,3]. However, the consultation paper proposed that the Authority not pursue these options further. The consultation paper also asked submitters if there were other products or market making arrangements the Authority should consider.

2 The peak futures product on the ASX NZ market relates to electricity prices during the hours from 7am – 10pm on business days.

3 The option product on the ASX NZ market is essentially a one-way quarterly baseload future. Purchasers buy at spot prices (plus the cost of the option) if spot prices are low, but hedge at the underlying quarterly baseload future price (plus the cost of the option) if spot prices are high, and vice versa for sellers.

Parties that submitted on the consultation paper

16 The Authority received 15 submissions on its consultation paper from a variety of parties, as shown in Table 1.

17 The submissions received, and the summary of those submissions, can be found on the Authority's website.[4]

Table 1: List of parties that made a submission

Generators / retailers		Consumers	Financial participants
Market makers	**Others**		
Contact Energy Limited (Contact)	Electric Kiwi Limited (Electric Kiwi)	Major Electricity Users Group (MEUG)	Cumulus Asset Management (Cumulus)
Genesis Energy Limited (Genesis)	Nova Energy Limited (Nova)	Fonterra Limited (Fonterra)	emhTrade Limited (emhTrade)
Meridian Energy Limited (Meridian)	Pioneer Generation limited (Pioneer)		Macquarie Bank Limited (Macquarie)
Mighty River Power Limited (Mighty River Power)	Pulse Energy Limited (Pulse)		OM Financial Limited (OMF)
	Trustpower Limited (Trustpower)		

Providing feedback

18 Feedback on this decision paper is welcomed and should be received by 5pm on Tuesday 16 February 2016. The Authority will acknowledge receipt of all feedback electronically. Feedback should be emailed to submissions@ea.govt.nz with "Decision Paper – Enhancing trading of hedge products" in the subject line. Please contact the Submissions Administrator if you do not receive electronic acknowledgement of your feedback within two business days. You can call 04 460 8860 if you have any questions.

19 Any feedback received will be used to assist the Authority with the development of standardised cap products with robust and regular pricing.

4 See http://www.ea.govt.nz/development/work-programme/wholesale/hedge-market-development/consultations/#c15362.

Reasons for decision to develop a cap product

Overview of this section

20 This section of this decision paper outlines the Authority's reasons for treating the development of a cap product as the primary priority of the Hedge Market Development Project. This section is structured as follows:

(a) the need to improve products to manage outage and profile risks

(i) discussed in the consultation paper "Hedge Market Development: Enhancing trading of hedge products"

(ii) what submitters said

(iii) what the WAG said

(iv) the Authority's view

(b) the consultation paper evaluated three developments that could support management of outage and profile risks to avoid any capacity and energy shortages

(i) consultation paper outlined three approaches

(ii) why the Authority preferred caps

(iii) why the Authority did not prefer peak and options

(c) submitters' views about these products

(i) measured support for caps

(ii) other preferred peaks

(iii) there was agreement that options should not be developed

(d) the Authority's decision is to develop a cap product.

Need to improve products to manage outage and profile risk management

21 There is a need to improve opportunities to manage outage and profile risk not covered by baseload products. In its consultation paper, the Authority noted significant improvements in the hedge market in recent years. It stated that the improved trading levels in baseload products has provided transparency around forward price expectations, which has improved decision making and better enabled wholesale and retail market competition.

22 However, a number of submitters expressed a view that there is a need to improve access to products that help with the management of profile and outage risks, in order to support greater retail competition and more efficient risk management. For example:

(a) Cumulus considered that the market needs an actively traded profiled hedge product, and that independent retailers cannot effectively manage price risk associated with a residential profile without such a product

(b) emhTrade suggested that parties currently internalise capacity risks, which results in inefficient fixed-price variable-volume pricing, demand response that cannot be hedged, and potentially inefficient investment in peaking plant

(c) Electric Kiwi considered that retail competition is being limited by the availability of profiled hedges

(d) Pulse suggested that the residual risk associated with hedging with baseload products is significant, relative to a retailer's margin.

23 The management of profile and outage risks was also an issue that the WAG raised in its recommendations to the Authority Board. The WAG:

(a) Stated that:

> *"Confidence in hedge markets would be boosted by an enhanced ability to manage profile and outage risks. Currently, the available options for managing these risks are through flexible generation, demand response, or over-the-counter hedge products (contracts-for differences or fixed-price variable-volume).*
>
> *While some parties have confidence in their ability to trade over-the-counter contracts that specifically protect against these risks, others have suggested it is challenging to access these products. Exchange traded products (such as caps or peaks) with associated market making arrangements would enhance the ability to manage profile and outage risks."*

(b) Recommended that the Authority encourage the development of exchange traded products that allow management of profile and outage risks.

(c) Proposed some specific target outcomes and timeframes that the Authority could expect would be achieved as a result of market-led development. Among the proposed targets was a suggestion that by July 2016, products should be sufficiently available to allow participants to manage their profile and outage risks effectively.

(d) Recommended that if market facilitation measures failed to deliver the target outcomes according to the target timeframes, the Authority should investigate whether there is a need to further develop the peak product on the ASX NZ market, including possible market making in that product.

24 The Authority considers that the need for improved information about different components of risk has been given prominence by the recent announcements of:

(a) the retirement of the Southdown power station by the end of 2015 (announced 24 March 2015)

(b) the intention to retire two remaining Huntly Rankine units by the end of 2018 "unless market conditions change significantly" (announced 6 August 2015)

(c) the retirement of Otahuhu B from September 2015 (announced 17 August 2015).

25 These announcements represent the potential removal of around 1,030 MW of firm generating capacity from the market. If they all proceed they would have the potential to affect both:

(a) energy scarcity, as there would be less thermal generation available to make up for any reduction in generation from hydro plant in a dry year

(b) capacity scarcity, as there would be less generation reliably available to meet periods of peak demand.

26 The forward price curve provided by derivatives trading is important for signalling the risk and potential for situations of scarcity to arise.

27 However, the forward price curve for baseload contracts represents a market assessment of future average prices, taking into account the full range of outcomes, including high inflows, low inflows, and possible power station and transmission outages. It provides little ability to distinguish between the components of price representing energy and capacity risk within the forward price. It is therefore unclear to what extent the baseload futures prices represent a perceived risk of energy scarcity and capacity scarcity.

28 The existing products readily available on the ASX NZ market are effective at signalling energy scarcity over the hydrology horizon of around six months. A period of sustained low inflows to hydro catchments, leading to low lake levels, has the effect of raising spot prices for sustained periods. The risk of energy scarcity is hence reasonably reflected in a quarterly or monthly average price. The effectiveness in signalling energy scarcity was tested to some degree during the period of record low hydro inflows in early 2012. The outcomes observed during that time suggested that the market's collective approach to fuel management has improved in recent years.

29 However:

(a) A baseload product may not transparently signal the risk of energy scarcity in the medium term (such as in two to four years' time), and hence the value of dry year reserve capacity.

(b) A situation of capacity scarcity would manifest in high prices for a relative few trading periods. A monthly or quarterly average price greatly masks this risk.

The consultation paper evaluated three developments that could support management of outage and profile risks to avoid any capacity and energy shortages

30 The Authority could pursue three developments that would improve parties' ability to manage profile risks, and provide transparency around the risks of energy and/or capacity scarcity:

(a) *A cap product.* This is an insurance-style product, which provides the ability to protect against the risk of prices exceeding a set level, which is referred to as a strike price. It would signal the market's expectations around how likely it would be for prices to exceed that level.

(b) *A peak product.* This relates to average prices during peak hours - for example, between 7am to 10pm on business days. It would allow parties to manage their exposure to prices during those hours, and signal the likely price outcomes during periods when demand for electricity is higher.

(c) *An option product.* The buyer pays a premium, to be protected against average spot prices settled over a specified period either above or below a specified strike price. The pricing of the premiums can provide information around the volatility of prices, and potential for various price outcomes.

31 The consultation paper discussed the potential to develop each of these three products further.

<u>Cap product: The consultation paper proposed that the market be encouraged to develop a cap product</u>

32 The consultation paper proposed that the Authority would further investigate options to introduce a half-hourly settled price cap product to the ASX NZ market. It also proposed that the Authority would determine how to attract a party to regularly post prices at which it would buy and/or sell that product to support trading.

33 The consultation paper put forward the following rationale for pursuing a standardised cap product with robust and regular pricing which would:

(a) Be of direct benefit to a range of physical market participants seeking insurance against the risk of very high spot prices. Specifically, it would provide an avenue for generation (or demand response) assets that only operate occasionally to receive regular income in order to support investment.

(b) Support greater participation by proprietary traders. This would result in more active trading in the products currently available on the ASX NZ market and greater intermediating activity, which would benefit physical market participants seeking to manage electricity spot price risk.

(c) Provide important price signals to the market, because the value placed on the product by market participants would be readily observable. This would provide transparency around:

(i) The market's forward view of capacity conditions and the cost of any shortages. Parties could use this forward view to inform the value of peaking capacity and demand response technology, which would support efficient investment in such capability, and enhance reliability of supply.

(ii) The long 'tail' of the spot market price distribution curve, which participants may not understand well, and thereby reduce any risk premium that may result in the baseload futures prices at times.

<u>Peak product: The consultation paper did not propose any development activities to promote trading in peak products, but that monitoring activity should continue</u>

34 The consultation paper proposed that the Authority would not further pursue the introduction of market making for the currently listed ASX peak futures product. However, the Authority would continue to encourage parties to actively engage in trading the peak product in the absence of market making.

35 The consultation paper put forward the following rationale for this proposal:

(a) There is a risk of diluting trading levels across too many products. The peak product creates a particular risk of this, because it is not very different from the existing baseload futures products, and is likely to move trading activity rather than grow it.

(b) The Authority's analysis using historical data has shown that retail profiled load is able to be effectively and efficiently managed through the use of baseload futures products, as there is a strong correlation between price movements in baseload and peak future products. This suggests that mass-market retailers would only see incremental value in the market making of peak products over and above products that are already available for trading and market made.

(c) The Authority has decided to focus its investigation and analysis on the cap product, because it considered that the cap product:

(i) is a more differentiated product, and is less likely to dilute trading levels in existing products

(ii) has the benefit of potentially attracting greater trading activity by proprietary trading and intermediaries

(iii) provides the opportunity for innovative products and strategies such as the CapSwap, where a participant may buy a futures contract and sell a cap contract (or the other way around)

(iv) allows parties to provide a peak product by re-packaging baseload and cap products.

<u>Option product: The consultation paper proposed no further action specific to the option product</u>

36 The consultation paper proposed that the Authority would not pursue the introduction of market making for the quarterly option over the baseload product that is currently available on the ASX NZ market (option product). However, the consultation paper proposed that the Authority would pursue improvements to levels of trading in the underlying baseload future and encourage financial participants to engage in more trading of the option product.

37 The consultation paper put forward the following rationale for this proposal:

(a) the option product is a relatively complex product and the Authority is not confident that it would have broad appeal

(b) the costs of market making an option product could be material for some participants

(c) a cap product is considered to be an inherently simpler product, so that a wider portion of electricity end users might make use of it .

Submitters on the consultation paper had mixed views about the most effective product to manage outage and profile risks

<u>Cap product: Submitters expressed measured support for developing a cap product</u>

38 Of the 15 submitters, seven expressed clear support for the potential introduction of a cap product. Most other submitters at least supported further investigations to determine if a cap product could support the Authority’s statutory objective and achieve net benefits - though there were evidently some doubts that it would.

(a) Macquarie agreed that a cap product would support the Authority’s statutory objective, as it considers that a cap is an efficient tool for managing extreme prices and demand flexibility.

(b) MEUG agreed that a cap product would support the Authority’s statutory objective, and would support voluntary development of such a product.

(c) Nova agreed, suggesting a cap product would support intermediaries and retailers in offering bespoke products, which would support improved risk management and retail competition.

(d) emhTrade considered that compulsory market making of a cap product was the most important improvement the Authority could make to the market, and would be in the long-term benefit of consumers. It suggested that:

(i) parties engaging in load control, aggregators, and large hydro generators could benefit from a cap product, in addition to those parties identified by the Authority

(ii) providing the ability to manage the two fundamental risks in the market - energy and capacity - would support intermediaries and proprietary traders in providing any bespoke product to other participants

(iii) parties currently internalise capacity risks, which results in inefficient fixed-price variable-volume pricing, demand response that cannot be hedged, and potentially inefficient investment in peaking plant

(iv) a cap should have a strike price that largely removes the energy/hydro component of price risk and isolates short-term capacity risk; a low-priced cap would act like an option, so would be unnecessary; and the premium should not be a consideration when setting the strike price.

39 Two submitters clearly did not consider it worthwhile to further investigate options to develop a cap product. For example:

(a) Genesis suggested that a cap product would not be suitable for New Zealand’s hydro-dominated market, and that the potential to attract more intermediaries “should not mean that the Authority pushes caps onto an unwilling market, eschewing other more useful products in the process”. Genesis suggested there is no evidence of demand for a standardised cap product.

(b) Mighty River Power suggested there are currently no barriers to the market offering a cap product, and since there has not been active cap trading, the development of cap trading would likely require that a mandate be placed on market makers, which Mighty River Power would not support.

<u>Peak product: Submitters considered that the benefits of a peak product would be greater than suggested</u>

40 Of the 15 submitters, three clearly agreed with the Authority’s proposal to not to actively further develop peak load products. A further three submitters agreed that market making for peak products should not be the Authority’s main priority at this time, instead preferring a focus on increasing the number of market makers, or on developing robust and regular pricing for standardised cap products.

41 However, eight submitters clearly disagreed with the Authority’s proposal, raising a number of arguments in support of market making for the peak product.

42 Submitters expressed support for market making of the peak product for the following reasons:

(a) There would be a number of benefits for various parties. Specifically:

(i) the peak futures are a key hedging tool for independent retailers (Electric Kiwi)

(ii) all market participants have a profiled demand shape, and hence a peak product would be valued by all participants (Genesis)

(iii) there are significant traded volumes of over-the-counter peak products, and moving this trading onto the ASX NZ market could provide more transparent forward pricing and reduce transactional costs (Genesis).

(b) Participants need the peak product so they can better match their load and hedge profiles. Specifically:

(i) increased granularity in hedge instruments is required to allow participants to better align hedges with underlying risks, and therefore incentivise new participants to enter the market (Macquarie)

(ii) the residual risks associated with hedging with baseload products are significant relative to a retailer's margin (Pulse)

(iii) the correlation between (monthly peak minus baseload) price spreads and baseload prices has historically been low, suggesting a volatile relationship, and the concern is magnified by the volume weighted nature of risk (Cumulus).

(c) Submitters had doubts about active trading in a peak product developing on its own. Specifically:

(i) Experience suggests that active trading would not eventuate in the peak product without market making (Pioneer, Pulse).

(ii) Despite their reluctance to market make peak futures, all of the main generators have assets that would allow them to do so, and they are active in supplying consumers with fixed-price variable-volume contracts and peak over-the-counter contracts. However, the generators rely on their assets to manage their within-day price risk, and to attract their greatest returns by increasing their output during periods of higher prices. They are therefore unwilling to trade away that capability (Pulse).

(d) Submitters that thought a peak product would have greater net benefits than a cap product made the following additional comments:

(i) the peak products are a natural extension of the baseload products, and could be captured by the voluntary market making arrangements at low cost (Genesis)

(ii) retailers would be unlikely to utilise caps, as they would struggle to manage prices up to the strike price of a cap (Pulse)

(iii) there is limited interest in over-the-counter cap products (Genesis)

(iv) market makers would claim similar concerns about market making a cap product as for peak products (Pulse).

43 In conversations with participants, a number of parties have told the Authority that they could voluntarily market make peak products. The Authority would welcome such additional market making, but does not intend to go further to encourage it.

Option product: Submitters agreed that development of the option product should not be pursued

44 Submitters generally supported the Authority's proposal not to investigate market making arrangements for the option product.

45 However, some submitters disagreed that the Authority's proposal to pursue more active trading in the underlying baseload future would provide the best approach to facilitating trading in the option product. Some submitters considered that support from trading in baseload and additional products may be required to effectively support option trading. For example:

(a) Electric Kiwi submitted that improving trading levels in baseload futures products alone would not be sufficient to support development of the option product, as improvements in baseload trading levels to date have not coincided with any increase in the availability of options.

(b) emhTrade suggested that the increase in trading levels that would be required to facilitate trading of option products is much greater than the Authority appreciates, which would be highlighted by better metrics.

(c) Macquarie considered that increases in trading levels in the option product would be best supported by improving trading levels in baseload, peak and cap products.

(d) Nova suggested that traders of option products would require sufficient trading levels and depth during volatile trading situations to quickly cover or trade out of positions, to be confident about the risks they were taking on. It suggested a need for more participants in order to protect against the impact of any single participant, and for market making arrangements that provide for force majeure events, rather than having simple opt out clauses.

The Authority's decision is to develop a cap product

The benefits of robust and regular pricing of standardised cap products are likely to be significant

46 The Authority notes that most comments from submitters about the proposal to investigate a cap product – either supporting or opposing the proposal – focussed on the potential benefits (or otherwise) of a cap product in terms of supporting greater retail competition.

47 In addition to the submissions the Authority has received, Authority staff have spoken with a wide variety of wholesale and retail market participants. The submissions and the conversations have made the diversity of views held by those participants clear. The Authority has therefore had to decide on the best next step for the market, and has chosen the introduction of a cap product as the action which will deliver the most benefits.

48 The Authority considers these benefits have the potential to be significant, particularly given the potential to attract more proprietary traders and intermediaries.

49 The Authority is also of the view that developing arrangements for the robust and regular pricing of standardised cap products would provide the greatest benefits of the three products in terms of supporting reliability and investment efficiency, and that these benefits would be substantial. The potential for reliability and investment efficiency gains attracted seemingly little attention from submitters. emh Trade was the one submitter that commented on this aspect, stating:

"It is clear to us that an efficient market for the transfer of capacity shortfall risk will be in the interests of all of the parties mentioned and, in the long term, will benefit consumers… This trading activity would create price transparency that could then be relied upon for investment decisions with exposure to capacity risk (most emerging technologies in the industry). This efficient market for capacity risk does not exist in New Zealand due to vertical integration."

50 The Authority considers that a cap product:

(a) has the potential to provide transparency around the risk of energy scarcity in the medium term, and hence the value of dry year reserve capacity

(b) would provide visibility around the risk of capacity scarcity, which is masked by a monthly or quarterly average price, but would be made more evident by a half-hourly settled cap product.

51 Furthermore, a cap product would provide a source of more reliable income to support investment in dry year reserve or peaking capacity, and firm demand response or load-shedding technology.

52 From discussions it has had with various participants, the Authority is confident that, contrary to comments by some submitters, there is sufficient evidence of demand for a cap product. While trading cap products in the over-the-counter market has historically been quite low, this likely reflects that:

(a) energy security has been supported by large thermal plants which have provided substantial amounts of energy at times of low hydro inflow sequences, which led to parties having reduced incentives to procure hedge cover capacity scarcity has historically been a lower risk for the market than energy scarcity

(b) participation from proprietary traders is a relatively new development, and these parties may be unlikely to purchase bespoke over-the-counter contracts from physical market participants, as the proprietary traders prefer to deal in homogenous products where they have confidence of their ability to efficiently change their positions.

53 The Authority agrees with the suggestion from Mighty River Power that there are no hard barriers preventing the market from developing a cap product of its own accord. However, the Authority considers that, to date, there has not been a strong incentive or urgency for large players in the market to do so. At present the baseload market makers enjoy the benefits of risk management deriving from vertical integration, but a cap product would better enable proprietary traders to contest the baseload product bids and offers posted by the market makers.

54 The Authority has decided that the best means of signalling profile and outage risks is to continue to enhance the efficiency of the spot market, as well as to further develop product choice and performance in the hedge market.[5] In this regard, a cap product is likely to be the most valuable development that the Authority could pursue.

55 The Authority notes that a range of issues have together led to its choice to progress robust and regular pricing of standardised cap products. These include:

[5] See http://www.ea.govt.nz/dmsdocument/19860

(a) people have expressed criticism that ASX baseload futures have an unwarranted premium over expected spot price

(b) there has also been criticism that over-the-counter caps contain an unwarranted premium over expected “pay out”

(c) people tend to think of the potential value of a product trading in isolation

(d) others have demonstrated to the Authority that there is value in combining products in innovative ways

(e) it is these more specialised parties that will benefit from a cap, but their trading of caps will also increase the potential for trading more of the other products available as well

(f) in this way the development of caps complements the trading of other futures products and options, and this may result in a reduction in any margin in ASX futures, when compared with expected spot price levels.

56 Overall the Authority considers there are likely to be sufficient benefits from robust and regular pricing of standardised cap products to justify placing priority on cap product development.

Reasons for not choosing a peak product

57 The Authority accepts the suggestion from some submitters that some parties would see value in the further development of a peak product, particularly for retail competition purposes. It also accepts that at times, this value could be significant (but may also be small at times). However, overall, it considers that the likely benefits of a cap product remain more compelling.

58 This is because it sees greater potential for reliability and investment efficiency benefits from a standardised cap product, which is robustly and regularly priced. The peak product may have some benefits in terms of signalling scarcity, as the difference between baseload and peak prices could provide insight into the drivers of high prices. A peak product could also support investment in flexible generation capacity.

59 However, the fact that a peak product relies on price averages over a month or calendar quarter means that the signals provided would not be clear. A peak product is also less likely to support investment in assets that are only used occasionally. A cap product is likely to have greater benefits in this sense.

60 The Authority’s analysis, using historical data, has shown due to the high correlation between prices for baseload and peak spot prices, retail load risk may be effectively managed through the baseload futures products, which are currently market made and actively traded. If price relativities between baseload and peak load were to become more volatile in the future, a peak product or other products for managing outage and profile risks would be more attractive.

61 Furthermore, robustly and regularly priced cap products have potential flow-on effects for trading levels in the peak product.

62 Some submitters express doubt about the extent to which these flow-on effects will occur, based on their observation that to date, active trading has not developed in products without market making. The Authority agrees with Pulse that the existing market makers’ reluctance to date to participate in market making for the peak product is – at least in part

– in protection of their portfolio position, rather than because of a lack of capability per se. Despite this, the Authority is aware that some parties have an interest in voluntarily market making peak products.

63 However, the Authority does not consider the existing market makers to necessarily be the only parties that could potentially support active trading – for any product.

64 As discussed in the consultation paper, the existing market makers are in a strong position to manage the risks associated with market making baseload products because they have:

(a) sufficient capital to meet collateral requirements

(b) sufficient experience and expertise to navigate the risks of providing daily bids and offers

(c) sufficient information to understand and react to the factors in the market that drive trading activity.

65 However, the Authority considers that developing robust and regular pricing on some key products – being the baseload and cap products – provides a foundation upon which a wider range of parties can manage the risks necessary for them to support active trading in a greater number of products. Providing this foundation is likely to come at a lower overall cost, and at lower risk, than focussing on the development of robust and regular pricing on an individual product basis.

66 Therefore, the Authority's intention is that participants that are not necessarily physical market participants (or at least, not solely trading on the basis of their physical market position) will bring active trading to the peak product. Proprietary traders can have a significant impact on trading levels, because they are not constrained by the need to hedge around a physical position, and because of their (typically) strong balance sheets. Proprietary traders have not, until recently, had an active involvement in the hedge market, and their increased participation would be better facilitated by a cap product.

67 The Authority supports parties engaging in trading the peak product, and does not rule out consideration of developing peak products in the future. It would strongly support some or all of the existing market makers or new parties voluntarily extending their role to include the peak products, as Genesis suggested in its submission.

68 However, the Authority does not consider that submitters have raised issues that justify a change in focus from a cap product to the peak product.

<u>Reasons for not choosing an option product</u>

69 Submitters did not raise any issues that would suggest the Authority had not fully appreciated the potential benefits of the option product. As a result, the Authority is comfortable that the cap product remains a better focus for development than the option product.

70 The consultation paper contemplated the idea of introducing a fixed strike-price option product, which could achieve some of the same benefits as a cap product. Because option products are already available on the ASX NZ market, it may be worthwhile for the Authority to facilitate the introduction of a fixed-strike price option.

71 However, as noted in the consultation paper, many parties view the option product as being an inherently more complex product than a cap product. This may significantly limit the value of an option product to many wholesale market participants, and see it remain

the domain of more sophisticated traders. Submitters generally supported the Authority's proposal not to further develop the option product at this time.

72 The Authority acknowledges the points made by submitters that options trading will likely remain limited given existing levels of trading in the underlying baseload product. The consultation paper noted the quarterly option product traded for the first time in March 2015 for 10 MW. Since the consultation paper was published, over 200 MW of options have traded. The Authority therefore considers that there are some early signs that trading levels in the quarterly baseload future are building to a point that supports trading of the associated quarterly baseload options. In order to encourage further development of the baseload futures and options products:

(a) the Authority will consider the reasons market makers sometimes draw back from market making when they consider their portfolio is under stress, and the voluntary nature of the market making agreements, as part of its considerations discussed from paragraph 82

(b) the Authority considers that development of robust and regular pricing of standardised cap products provides the best avenue to increase trading levels more broadly - including in baseload, peak, and option products - by facilitating greater participation from proprietary traders.

Approach to developing robust and regular pricing of cap products

There are likely to be opportunities to achieve robust and regular pricing of standardised cap products at low cost

73 The consultation paper contemplated the prospect of just a sell price being sufficient for a cap product, since purchasers might largely treat it as insurance, and hence hold it until maturity.

74 However, submitters that commented were generally of the view that two-sided pricing would be required to support a cap product. For example:

(a) Cumulus considered it essential to have two-way prices to incentivise competitive pricing.

(b) emhTrade did not agree that participants would adopt a ‘buy and hold’ strategy with caps, which it suggested is evidenced by the trading of cap products in Australia, and that trading would be higher in New Zealand. It suggested that an efficient market would have participants adjusting their portfolios to reflect outages and customer acquisition/loss, which would create the price transparency to support investment decisions.

(c) Macquarie suggested that liquidity on both sides of the market would be essential, as parties needed to be able to trade in and out of positions. It considered that one-sided liquidity would limit the scalability of a cap product.

(d) OMF considered that one-way pricing was not usually efficient, particularly if the market maker was not predisposed to buying or selling the product.

75 In addition, submitters had doubts about the practical ability to attract market making for a cap product. There were also concerns that the Authority would seek to mandate market making in a cap product. Opposition to the potential for mandatory market making of a cap product was strong from the submissions of three of the current market makers.

76 The Authority considers there are likely to be significant costs associated with a mandatory approach to market making for a cap product, given inherent difficulties in designing such an arrangement, and the loss of flexibility inherent in a regulated solution. A mandatory market making requirement for a cap product has the potential to place costs and risks on those captured by it, which some may find difficult to manage.

77 The Authority agrees with submitters that posting both buy and sell prices would be preferable. This would ensure that parties could take on, and back out of, a risk position, and this availability of trading opportunities would be particularly necessary to attract activity from proprietary traders.

78 The Authority is open-minded as to how it can achieve robust and regular pricing for a standardised cap product. It is likely that the majority of benefits from a cap product could be achieved by having a diverse range of parties involved in voluntary trading to varying

extents. After discussions with stakeholders, the Authority is confident that there are opportunities to develop a cap product on a voluntary basis, and intends to focus on these opportunities in the first instance.

The Authority's preference is for voluntary development in the first instance

79 The Authority intends to work with stakeholders to develop a cap product through a market-facilitation approach. It will therefore engage in discussions with relevant parties to determine how it can facilitate their support for a cap product.

80 There are a number of issues that the Authority will work through with participants. In particular, it will work with participants to determine:

(a) Whether any cap product developed should focus primarily on signalling energy scarcity, capacity scarcity, or whether separate products to signal both may be appropriate. This will in turn affect the strike price of the cap product, or products. It may be that participants favour developing an existing product.

(b) If a new cap product is introduced, how far ahead in time it should be listed for. The quarterly products available on the ASX NZ market extend ahead for three and a half to four years. However, it may not be necessary to list a cap product for this same period, at least initially.

(c) An appropriate trading platform. ASX is an existing platform for trading a cap product. However, there are several potential platform providers that could support trading of a cap product, and one of these alternative providers may be better placed to engage in developing a cap product.

81 The Authority:

(a) Has begun its analysis into the design of a cap product. It will share this analysis, and will seek the assistance of various participants and user groups to support the product design phase.

(b) Is in discussions with potential platform providers, and is considering the range of options and the way forward.

(c) Is in discussions with parties that may have an interest in trading a cap product, and is considering how to facilitate their involvement.

Reasons for decision to further consider whether and how to proceed with baseload product developments

The consultation paper identified benefits from further development of the baseload products

82 The consultation paper proposed that the Authority would investigate options to change market making arrangements, so as to encourage greater trading activity in the baseload products on the ASX NZ market.

83 The consultation paper proposed investigating three developments to improve trading levels in baseload products. These were:

(a) tighter bid-offer spreads

(b) greater market making volumes

(c) an extension in the listed length of the monthly product, and in the associated market making arrangements.

84 A reduction in the bid-offer spread under the market making agreements was one of the target outcomes the WAG identified in its recommendations to the Board (discussed in paragraph 23). Among the proposed targets was a reduction in the maximum bid-offer spread for baseload products on the ASX NZ market, from 5% to 3%. The WAG suggested that this reduction should be targeted to occur by October 2015.

85 The WAG further suggested that the Authority consider implementing back-stop measures if market facilitation measures failed to deliver the target outcomes according to the target timeframes. Specifically, the WAG recommended the Authority should develop some specific back-stop measures (including possible Code amendments) in case the market facilitation measures fail to deliver the specific target outcomes, to be implemented if required.

86 Most submitters also supported developments to improve trading levels in the baseload product.

87 Twelve of the fifteen submitters expressed clear support for investigations into improving the market making arrangements for the baseload futures product. Comments included:

(a) Electric Kiwi stated:

"We do not consider that baseload futures liquidity has reached a point where the market is self-sustaining without market making."

(b) Macquarie stated:

"Macquarie sees the baseload futures contract as being the foundation of the electricity hedging market. Confidence in this product is essential for the development of the hedge market, for the NZEM"

88 Of the three specific developments the Authority proposed, all submitters saw an extension in the monthly contracts as worthwhile, seven submitters clearly supported tighter spreads, and eight supported increased volumes.

89 However, some submitters noted concern, or expressed support contingent on how the Authority would achieve the improvements. For example, comments included:

(a) "…discussion to find a common ground for parties to mutually improve market making for baseload futures products should continue."

(b) "It should be recognised that the existing market makers have contributed a significant amount of liquidity to the market to date, and continuing to make this task more onerous may have diminishing returns in the baseload products."

(c) "All of these improvements could have merit, but not if they undermined the sustainability of the current voluntary arrangements."

90 One submitter suggested improvements are unnecessary, as the baseload product is already highly liquid.

There are opportunities to facilitate some further developments

<u>The Authority will facilitate an extension for the monthly baseload product</u>

91 All submitters saw an extension in the listed length of the monthly futures product, and in the associated market making arrangements as worthwhile. Starting with the current month, monthly baseload futures are listed four to six months and market made for three months.

92 This topic was discussed at the 15 August 2015 ASX User Group meeting. At that meeting, market makers and ASX expressed a willingness to progress developments to the monthly baseload product, including extension of the listed length.

93 The Authority is pleased with ASX's and the market makers' willingness to continue their support for, and further develop the monthly product. The Authority will support these developments as necessary through the ASX User Group.

94 Most submitters supported extending market making for the monthly product to at least align with the end of the second quarterly baseload contract (that is, out four to six months). The Authority understands that some of the market makers have suggested they could be open to amending the terms of their market making agreements to cover six months ahead, when the agreements come up for renewal, which is expected to be at the beginning of the 2016 calendar year.

95 Some submitters expressed a desire for market making to extend beyond six months. However, submitters had conflicting views on the value of this. For example:

(a) Meridian supported an extension of market making in the monthly product to cover the next two quarters. It did not see value in extending it out further, as the hydro situation is not sufficiently clear six to twelve months out that it would add value over and above the quarterly product.

(b) emhTrade suggested that six months would be a reasonable period for market making in monthly contracts, and that market making until the end of the next quarter would ensure no arbitrage pricing would be held across the quarterly and monthly products.

(c) Fonterra suggested that extending the monthly futures contracts and market making arrangements out to nine months would assist it in managing its seasonal load profile.

(d) Pioneer supported a prompt extension of the monthly futures product to a minimum of six months at all times, to allow for intra-quarter shape risk to be managed before hydro supply risks unduly influenced prices.

(e) Pulse recommended market making in the monthly products be extended out to align with the most immediate four-quarterly contracts, as that would allow parties to shape their hedge profile before prices became most volatile.

96 The Authority would encourage ASX and the market makers to voluntarily extend the monthly product and market making arrangements to cover seven to nine months. However, it considers any extension to be a valuable development.

<u>The Authority will facilitate the publication of market making metrics</u>

97 The consultation paper proposed that the Authority would undertake further investigation and analysis of options to publish metrics about the extent of market making.

98 Submitters expressed strong support for developing market making metrics to support transparency. Of the fifteen submitters, just one considered current levels of transparency to be adequate. Two did not provide a view on this issue.

99 The Authority notes that it does not consider developing market making metrics to be an issue of compliance, because of the voluntary nature of the arrangements. Rather, it considers developing market making metrics to primarily be an issue of:

(a) building greater confidence in the arrangements

(b) providing information that the Authority can use to inform the need for further development of the hedge market.

100 However, as the Authority identified in the consultation paper, one of the key incentives for the current market makers to undertake their activity is their mutual expectation that each will contribute. The market makers therefore have an interest in developing market making metrics, as it should provide assurances that each is acting in accordance with its agreement with the ASX. This was evident in the submissions from the current market makers, who all suggested that information identifying adherence with agreements should be available to the market makers. Some suggested that anonymous and aggregated information could be made available to a wider audience.

101 The Authority expects that there are sufficient incentives in place for market making metrics to be developed through a market-led process. Based on its current understanding of ASX's software development, the Authority expects that the data that will be produced will be adequate for supporting its objectives under paragraph 99.

102 Therefore, the Authority has decided that an appropriate way forward is for it to:

(a) encourage ASX's software development

(b) work with ASX, market makers, and the ASX User Group to facilitate the resulting data being packaged into an appropriate format and made available to the wider market

(c) consider developing additional market making metrics, only if the data produced by ASX proves insufficient for providing the necessary transparency to build confidence in the market making arrangements, and to inform the need for further development.

Some issues may persist under existing arrangements for baseload products

Further development of baseload products appears limited under the status quo

103 While the market makers appear willing to extend their market making agreements for the monthly baseload product, they may be unlikely to voluntarily extend them to cover a longer period.

104 Furthermore, it is evident from submissions that a reduction in the maximum bid-offer spread and an increase in market making volumes are unlikely to be achieved through voluntary arrangements.

105 All of the current market makers submitted that a tighter bid-offer spread and increased volumes could undermine the current voluntary arrangements, and/or suggested that they be achieved by means other than changing the terms of the market making agreements - increasing participation being a particular suggestion. For example:

(a) Contact noted its preference to bring more market makers into the market through an incentivised arrangement, which it said would reduce spreads and increase volumes.

(b) Genesis suggested that reducing spreads would reduce market makers' ability to profit from their activities, so it would not support such a development without an offsetting reduction in costs. It suggested the Authority should achieve lower spreads by increasing the number of market makers, which would make it easier to avoid or manage unwanted hedging positions.

(c) Meridian did not support investigation of a tighter bid-offer spread at this stage, as it suggested it would exacerbate the free-rider issue, which may undermine voluntary market making arrangements.

(d) Mighty River Power disagreed with the Authority's suggestion that market makers would be likely to benefit from tighter spreads and greater volumes. Rather, it considered that this would increase risk to the market makers, and negatively affect the sustainability of voluntary arrangements.

106 The Authority agrees that an increase in the number of market makers could reduce spreads, and would increase market making volumes. However, the Authority has not identified further parties that appear willing to market make for the quarterly baseload product on a voluntary basis.

107 It therefore appears there are limitations to what a market-facilitation approach might achieve.

108 A number of submitters were of the view that the current voluntary market making arrangements are limiting the hedge market's development. For example:

(a) Cumulus credited market making for the vast majority of progress in the hedge market over the last five years, but suggested that the hedge market has now stalled, with the largest generators appearing unwilling to commit to more market making.

(b) emhTrade suggested that there is a "very real" free-rider issue that reduces willingness to participate on a voluntary basis and hampers constructive discussion on market improvements.

(c) OMF suggested that voluntary participation has proved to limit further market development.

109 The Authority notes that since the “Hedge Market Development: Enhancing trading of hedge products – Consultation Paper” was published, open interest in the ASX NZ market has increased over 30% and transactions have reached record monthly levels of over 2,800 GWh. Given limitations in what can be achieved under the status quo, the issue of achieving further improvements to market making for the baseload product is hence closely tied to the proposal that incentivised or mandatory market making be introduced.

<u>Some submitters expressed concern about the security of market making arrangements</u>

110 Submitters also identified further issues with the current voluntary market making arrangements that may affect the need for more authoritative arrangements. For example:

(a) Contact submitted that the free-rider problem means that the status quo may not be sustainable.

(b) Electric Kiwi suggested that the benefit to consumers of greater competition in the retail market is being held back by independent retailers' inability to procure hedges for retail volume profiles, and that more authoritative arrangements were hence necessary.

(c) emhTrade submitted that the current voluntary arrangements do not provide liquidity consistently.

(d) Macquarie considered that more authoritative arrangements would ensure long term confidence and stability in the hedge market.

111 Mighty River Power was the only submitter that clearly expressed confidence in the sustainability of the current voluntary arrangements, suggesting that they are working well, and that the market could make further progress.

112 The other 14 submitters expressed mixed views as to whether further intervention is required at this stage. For example:

(a) Genesis submitted that it had “reluctantly” come to the view that a regulatory alternative is likely to be required if the ASX NZ market is to continue to provide value

(b) MEUG suggested it was unclear whether claims of free-riding and threats to withdraw from market making were a reflection of real policy issues, or just promotion of a self-interest by some parties

(c) Meridian suggested that collecting and publishing metrics on existing market makers' performance could be sufficient to encourage market makers to meet the terms of their agreements, and give confidence to other participants about the robustness of market making arrangements

(d) Pulse suggested that more authoritative arrangements are likely to be necessary to address the market makers’ free-rider concerns, and would definitely be necessary to achieve liquidity in other products.

113 In the consultation paper, the Authority noted that the continued success and development of the ASX NZ market relies on building confidence amongst participants and stakeholders that it provides an efficient view of forward prices, and a secure and stable trading option, both now and in the future. Based on submissions, it is apparent that levels of confidence vary quite widely among stakeholders.

The Authority will further consider whether and how to proceed with further developments

114 The Authority is very pleased with the gains the hedge market has made in recent years, and considers that the current market making arrangements are providing significant value to the industry. The Authority considers that the current arrangements are sustainable – noting the comment from MEUG in paragraph 112(b) - but acknowledges that there are some issues that justify considering the need for a different approach.

115 The Authority notes that moving from a voluntary approach to enhancing the trading of the range of hedge products available will not necessarily provide a superior outcome, because the costs may be high.

116 While the Authority considers it worthwhile to assess the merits of further development, doing so is a second order priority at this time. This is because:

(a) the ASX and participants are making incremental improvements that will support trading

(b) the benefits of a robustly and regularly priced cap products are clear and compelling, and the Authority's primary focus should be on that development

(c) while the development of a cap product proceeds, the resource to consider whether and how to proceed with further developments for the baseload products will be limited.

117 The Authority will therefore assess whether and how to proceed with developing the baseload product when resources become available.

Other potential hedge market developments

The Authority will not take any specific action on other products raised by submitters

118 The consultation paper asked submitters if there were any other products or market making arrangements that the Authority should investigate further.

119 In response, submitters raised three issues not otherwise addressed in this decision paper:

(a) the introduction of a new Financial Transmission Rights (FTR) node in the central North Island

(b) short-term (day-ahead or week-ahead) hedge markets, including standardised products

(c) reducing ASX NZ market contracts down to single node.

120 The Authority considers that there may be value in considering these issues and that this would be best progressed through other avenues. It notes that:

(a) The FTR manager is developing guidelines around the addition of new nodes. The potential for a central North Island node can be addressed via the FTR manager's processes.

(b) The Authority's Spot Market Refinements project is exploring options for adding or facilitating an hours-ahead market. The Authority will specifically study the merits of an ahead market and will consider both physical and financial methods of introduction. The Hedge Market Development: Enhancing Trading of Hedge Products project is progressing in conjunction with that project.

(c) The Authority does not support reducing the ASX NZ market contracts down to a single node. While there may be some trading level benefits, it is unlikely to be a simple additive effect, and some overall loss in traded volumes and open interest is likely. However, if participants favour it, the ASX User Group could consider and progress a move to a single ASX node.

The ASX/AEMO design study will inform the potential for using futures to offset prudential security requirements

121 The Authority has had an ongoing project to evaluate if ASX positions can offset energy market prudential security requirements.

122 Several parties have suggested that being able to use an ASX futures position (traded through an exchange rather than over-the-counter) to offset prudential security requirements would improve access to hedging options, and allow for a more efficient use of capital. The Authority also notes that submissions in response to the November 2014 WAG discussion paper expressed widespread support for such an arrangement.

123 An information paper published in June 2015 identified that the Australian Electricity Market Operator (AEMO) was collaborating with ASX on potential concepts that involve clearing physical and derivative markets through a common process, to achieve greater collateral efficiency.

124 The Authority noted that AEMO and ASX appeared to be at the forefront internationally in developing arrangements that could allow for futures offsets. It therefore stated that it would await the outcomes of the AEMO and ASX work to inform its evaluation, rather than 're-invent the wheel', given the effort involved, and the considerable potential for shared learning.

125 The Authority expects AEMO and ASX to publish the findings of their work shortly. The Authority will further consider futures offsets when that work is published.

Further recommendations from the WAG are 'pending'

126 In addition to the recommendations discussed in this decision paper, the WAG made a number of other recommendations to the Authority Board about how to develop the hedge market. The WAG's recommendations may be found at: http://www.ea.govt.nz/development/advisory-technical-groups/wag/final-report-recommendations/ .

127 The Authority considers the WAG's work to have been very thorough, and that its recommended developments have the potential to provide significant value to the hedge market. The Authority has placed those recommendations into the 'Pending' category of the Authority's work programme, and will progress them as resource allows.