6 March 2023

Electricity Authority
Market Development Advisory Group
By email: MDAG@ea.govt.nz

Price discovery in a renewables-based electricity system – Options paper

Meridian appreciates the opportunity to comment on the Market Development Advisory Group (MDAG) options paper on price discovery in a renewables-based electricity system.

Meridian strongly supports MDAG's work. The questions raised and the issues considered by MDAG are important for all New Zealanders. The New Zealand power system exists to best serve consumer needs. As we move towards a 100% renewable power system the wholesale market will need to evolve to ensure that it continues to do that. We support the majority of MDAG's proposed recommendations and look forward to working with MDAG, the Authority, and the rest of the industry to further develop and implement these recommendations. We also support MDAG's suggestion that co-design with industry would be a positive way to progress many of the proposed options.

We are also grateful for the open and interactive engagement we have had to date with the MDAG Chair and Secretariat. We hope this continues as MDAG works towards final recommendations.

This submission is structured to follow the main chapters of the MDAG paper:

- Do we need a market
- Keeping the lights on – how to ensure reliable and efficient operational coordination
- Ensuring effective risk management and efficient investment
- Lift participation of demand side flexibility

- Strengthen competition
- Increase public confidence
- Navigating the transition
- Getting the work done.

In some of these sections our comments are brief, particularly where we fully support MDAG's comments and have nothing of substance to add. We also provide direct responses to each of the consultation questions in the Appendix to this submission.

The final section of this submission addresses MDAG's questions on "Getting the work done" but also addresses processes, resourcing, and the sequencing of next steps to be followed by the Electricity Authority.

For a few proposed options (particularly the "backup" options) Meridian considers further work should be done to build a better understanding of the likely impacts on consumers. Throughout this submission we have provided our opinion on the consumer impact where we consider that constructive. The table below summarises Meridian's support for the options proposed by MDAG. Note that duplicate options have not been repeated in the table below, nor have we included any of the options that MDAG does not support. Meridian agrees with MDAG that those options should not be recommended at this stage.

TOPIC	CODE	MEASURE	MDAG	MERIDIAN
Reliable and efficient operational coordination	**A1**	Improve short-term forecasts of wind, solar and demand		
	A2	Strengthen governance for next phase of FSR project		
	A3	Update shortage price values		
	A4	New reserve product to cover sudden reduction from intermittent sources		
	A5	Offer price reductions after gate closure		
	A6	Investigate + develop ahead market		
	A7	Remove UTS over-ride of trading conduct provisions		

TOPIC	CODE	MEASURE	MDAG	MERIDIAN
Effective risk management and efficient investment	**B1**	Greater transparency of hedge info (esp non-base load) covering offers, bids + agreed prices		
	B2	Market-making for longer dated futures (for price discovery)		
	B3	Publish aggregated information on pipeline of new developments, energy and capacity adequacy		
	B4	Enhance stress testing regime		
	B5	Develop standardised 'shape' product(s)		
	B6	Develop flexibility access code (non-price elements)		
	B7	Extend trading conduct rules to hedge market		
	B8	Market making in caps or other shaped products		
Lift demand side participation	**C1**	Monitor provision + uptake of DSF-rewarding tariffs (incl automation)		
	C2	Sunset profiling if smart meters in place		
	C3	Require retailers to offer DSF tariffs		
	C4	Develop standardised shape-related hedge products to reward DSF		
	C5	Provide significant funding for pilots/trials to kick-start dynamic tariff use		
	C8	FSR – improve DSF visibility and remove Code barriers		
	C10	Procurement process for high-scarcity DSF (RERT)		

TOPIC	CODE	MEASURE	MDAG	MERIDIAN
	C11	Ensure distribution pricing reflects network needs		
	C12	Investigate extending LMP into distribution networks		
	C13	Provide info to help large users with upcoming DSF investment decisions		
	C14	Provide info to help domestic customers with DSF decisions		
Strengthen competition	**D1**	Develop dashboard of competition indicators for flexibility segment of wholesale market		
	D7	Virtual disaggregation of flexible generation base		
Increase public confidence	**E1**	Structured information programme for wider stakeholders		
	E2	Regular briefings for Ministers and officials on current and expected conditions		
	E3	Increase inter-change with international experts		
	E4	Enhance monitoring with more autonomy		
	E5	Periodic warrant of fitness review for independent regulatory agencies		

MDAG/Meridian supports

MDAG partially supports

Meridian considers further work should be done to understand the consumer impact

Do we need a market

Meridian agrees that we need a market, and we agree with the comments in the MDAG paper on the role of markets in a renewables-based power system.

Keeping the lights on – How to ensure reliable and efficient operational coordination

Again, Meridian agrees with MDAG that in an increasingly diverse and decentralised power system, spot prices will continue to be a critical signal of the value of energy at different times and in different locations. Like MDAG, we have not identified any alternative to a spot market to efficiently coordinate decisions across many participants.

Meridian agrees that some capacity challenges are emerging in the New Zealand market. This applies particularly to operational coordination of slow-start thermal units and other resources that need to make commitment decisions ahead of real time based on forecast information. The options considered by MDAG to address the winter peak capacity challenge overlap with the Authority's recent consultation on efficient solutions to promote consumer interests through winter 2023.

We will not repeat our submission to the Authority[1] but note in summary Meridian's support for the following options:

- the system operator providing better information to the market on headroom in the supply stack;
- the system operator providing forecast spot prices under demand sensitivity cases published alongside the central price forecast;
- improving the accuracy of intermittent generation offers (and in the short term the system operator undertaking a centralised wind forecast and publishing any significant differences between its central forecast and the forecast information in offers);
- clarifying the availability and use of discretionary demand control like ripple control; and
- introducing a new integrated ancillary service to provide a buffer against unexpectedly large variations in demand or intermittent generation.

[1] https://www.ea.govt.nz/assets/dms-assets/31/Meridian-submission-Winter-2023-reliability-options-1383296.pdf

Those options should, as far as possible, be considered for implementation ahead of winter 2023. Meridian also considers periodic reviews of the level of administratively determined scarcity prices to be sensible. This will ensure scarcity prices reflect the actual costs of scarcity and appropriately incentivise investment.

Meridian therefore agrees that MDAG's options A1, A2, A3, A4, and A7 should be considered further by the Authority.

Meridian believes further work should be done to understand the consumer impact of options A5 and A6.

Option A5: Allowing marginal plant to reoffer inside gate closure

Option A5 would allow marginal plant to reoffer in real time to reduce their offer price and ensure full dispatch. We will be interested in the views of thermal generators, but it seems to us that there would potentially be significant downside risks. MDAG's logic about increasing certainty and improving thermal commitment seems to work if there is only one party responding in real time. However, there would in fact be even less certainty where multiple parties are making commitment decisions ahead of real time. Any reoffering in real time would:

- mean another party became marginal, potentially lead to cascading offer changes by multiple marginal parties;
- affect the marginal clearing price and could result in significant changes to prices (for example when there are large steps between the adjusted offer and the next offer in the stack) actually reducing the ability of both the supply and demand side to confidently respond to price signals; and
- increase the complexity and operational challenges faced by the system operator to coordinate dispatch.

Option A6: Introduce an ahead market

Option A6 would introduce an hours-ahead market. This would be a significant undertaking. It would potentially be disruptive to the market and to investment certainty, at a time when investment is critical. As stated by the Authority:[2]

[2] https://www.ea.govt.nz/assets/dms-assets/31/Driving-efficient-solutions-to-promote-consumer-interests-through-winter-2023.pdf

> The key drawbacks with hours-ahead markets are that they introduce additional complexity and processes for participants to manage. Some parties also consider that hours-ahead markets unduly favour parties who can readily predict their output or demand, as they can insulate themselves from balancing prices (which like spot prices can be very volatile).
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> …
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> Introducing an hours-ahead market would take significant time to introduce because of the changes needed to market systems. There could also be transitional issues to address, such as the effect on existing hedge contracts (e.g. whether they settle against ahead or balancing prices). This option would require significant policy development and market systems changes. It would also significantly impact participant processes and practices.

In Meridian's opinion, to proceed with this option, policy makers would need to be confident that the additional complexity and costs would be more than offset by increased benefits to consumers. In fact, there may be a risk that this proposal will drive increased costs to consumers at least in the medium term due the reduced investment certainty resulting from such a change. Investors in new generation development would want to understand the impacts of the new market design on their expected return before committing to invest in new generation.

Based on the analysis presented it seems to Meridian that other options suggested by MDAG in this section would better address any operational coordination problems with less risk of increased costs to consumers. Other alternatives could also deliver better outcomes for consumers. For example, MDAG could consider the option of introducing a voluntary day-ahead futures contract, which could deliver the same benefits as a full ahead market obligation with reduced complexity and far lower implementation costs and transition risks.

Ensuring effective risk management and efficient investment

Meridian agrees with MDAG that the contract market helps with risk management and investment by:

- enabling volatility of revenue and costs to be managed; and
- signalling longer term spot price expectations.

Meridian also strongly agrees with MDAG's finding that the market should continue to rely on private contractual arrangements between buyers and seller to put in place effective risk management. This will lead to superior outcomes compared to the alternative of a regulator seeking to procure a set amount of capacity and then forcing participants to contract to allocate the costs of that capacity. Meridian's assessment of how such capacity mechanisms have played out in other jurisdictions is consistent with that of MDAG and the overseas regulators and experts with which MDAG engaged. It is extremely difficult for any regulator to efficiently identify the optimal mix and level of resources for the system. Putting that responsibility on a regulator concentrates risk rather than spreading risk assessment decisions amongst diverse and knowledgeable participants. In Meridian's opinion, capacity mechanisms are likely to increase costs to consumers. Like MDAG, Meridian prefers a participant led approach where participants manage their own risk. We acknowledge that access to contracting tools and information is an important enabler of these private risk management decisions.

Improving the availability of information

Meridian supports improving the information available to participants on contract prices. Updating and enhancing the contract price disclosure platform[3] (Option B1) seems like a sensible improvement that should happen as a matter of course to further this objective. We also support extending the disclosure obligation to include information on contract offers/bids that do not result in an agreement. This obligation should apply equally to buyers and sellers – perhaps by placing the obligation on any party undertaking an RFP.

Meridian also supports the collation and publication of more comprehensive and regular updates on the development pipeline, and projected energy/capacity margins (Option B3).

Mandatory market making of longer dated futures

MDAG has suggested mandatory market making for longer dated futures (Option B2). It has not stated what exact contract duration it thinks would be beneficial, but MDAG seems to suggest more than the current price curve but less than ten years which "is unlikely to be cost-effective".[4] Listing of longer dated futures may have merit. It would be relatively simple for the ASX to list new products on the exchange. Meridian suggests further work should be done to understand the costs and benefits of mandatory market making in respect of such products.

[3] https://www.electricitycontract.co.nz
[4] MDAG Library of Options, paragraph 3.8.

The Authority recently proposed increasing its levy funding by $14.4 million to cover the costs of a fifth commercial market maker for the existing price curve. The fifth market maker provides only 20 percent of the total market making service for the existing price curve and the $14.4 million covers only the 9 months from 1 September 2022[5], meaning the notional annual total cost of market making the current forward curve could be at least five times that sum (i.e. $72 million per annum) and likely more (i.e. $90 million per annum if the 9-months of costs are extrapolated to a year). That cost could be expected to increase proportionately with any extension to the duration of the forward curve. Any expected benefits to consumers of a longer forward curve would presumably need to exceed those costs. Meridian suggests that MDAG and/or the Authority should carry out further analysis on this point before developing this option further.

Improving price transparency for bids, offers, and contracts transacted over the counter may be a superior alternative to provide an extended forward view of prices at considerably lower cost to consumers. Meridian has seen an increase in over the counter interest in longer dated contracts. Therefore, a longer dated price curve would presumably become public if price transparency is improved.

Standard products and an over the counter access code

Meridian agrees that being able to hedge shape-related price risk may become increasingly important. We therefore support the Authority working with the industry to co-design:

- A standardised product (or products) which meets the needs of buyers and sellers, including demand flexibility (Option B5), noting that any standardised products would need to actually be of use to participants to manage risk and there should always be the ability to develop bespoke arrangements and innovate to manage risk outside of any standardisation; and
- An access code covering non-price terms for over the counter hedge transaction (Option B6). We think this could be broader than currently framed by MDAG and could cover all over the counter engagement between participants including reasonable expectations on both buyers and sellers, covering matters such as how requests should be made, record keeping, response times and how responses should be made. The Authority has already convened an over counter working group for the purposes of completing this task.

[5] https://www.ea.govt.nz/assets/dms-assets/30/Commercial-Market-Making-Scheme-v5.pdf

Extending trading conduct rules

Extending the trading conduct rules in the Code into the hedge market (Option B7) would not be a simple undertaking. Meridian encourages MDAG to further develop the details of this option, including:

- whether any rule would apply to contract buyers, seller, or both – as these are financial products, most participants are both buyers and sellers at times;
- whether the rule would apply in respect of bids and offers, or transactions, or both
- whether any rule would apply to the ASX market, or over the counter market, or both;
- whether the Code is able to apply equally to physical and non-physical participants in contract markets, for example offshore financial institutions that are particularly active on the ASX;
- how any rule would differ in effect to the new section 36 of the Commerce Act; and
- how any rule would be implemented in practice by participants, the Authority, Rulings Panel, and Courts, given a counterfactual analysis of hedge behaviour in the absence of significant market power may be challenging due to the considerable uncertainty about future prices.

While the details of this option and the costs and benefits to consumers should be considered further, in principle Meridian would be supportive of a well-conceived conduct measure along the lines of this option.

Back-up option: Market making for shaped contracts

As with the option to extend market making obligations to longer dated contracts, Meridian suggests further work should be done to understand the costs and benefits of the "back-up" option of market making for any new shaped contract product or products (Option B8) before any decision is taken to proceed. As discussed above, the costs of market making are significant. Furthermore, Meridian considers the other options proposed by MDAG will be sufficient to support forward price discovery and access to shaped forward contracts. Given MDAG only "partially supports" this option, it would seem a poor use of limited Authority resources to undertake further work at this stage. The focus should instead be on developing supported options, testing the costs and benefits of those options, implementing them, and reviewing the impacts post implementation.

Lift participation of demand side flexibility

Like MDAG, Meridian expects the cost of demand side flexibility to become increasingly competitive as an alternative to using supply-side resources, particularly as the value of flexibility increases due to increased intermittent generation and less thermal generation. Demand side flexibility can play a similar role to peaking generation plant, potentially with lower costs and carbon emissions. Meridian agrees that more demand side flexibility will increase competitive pressure on wholesale prices, especially when the market is tight, and prices are higher than average. This may help to mitigate some of the volatility that would otherwise be expected in wholesale prices.

While MDAG is primarily focused on smart controls and batteries in households, in Meridian's opinion there is also a significant opportunity to lift industrial demand side flexibility.

We agree that it is critical that market settings enable the demand side to participate and compete on a level playing field with the supply side and that any barriers be removed.

Meridian supports increased monitoring of the retail demand side flexibility market and tariff availability (Option C1).

Meridian is also open to a sunset date on the use of profiling for reconciliation purposes for ICPs that have the capability to measure half-hourly data (Option C2). However, we query whether a regulated sunset would have much impact given retailers are organically moving to half-hourly reconciliation, especially where customers request plans that require it. Over time penetration of EVs and other flexible appliances will increase, along with the technology to automate flexibility, therefore the rewards available to mass market consumers will naturally drive greater uptake of demand side flexibility rewarding tariffs and the half hourly reconciliation that is a necessary enabler.

Given the prevalence of demand side flexibility rewarding tariffs in the market already, MDAG's "backup" Option C3 to require such tariffs to be offered, would seem to have very limited impact. As MDAG acknowledges, even a simple day-night tariff, or period of free power, should meet the requirements. Such tariffs are already widespread in the market. For example:

- Meridian's EV plan with lower rates from 9pm to 7am every day;[6]
- Powershops' GetShifty plan with different peak, off-peak, and night rates;[7] and
- Powershop's Free Weekend offer where the first weekend of each month is free for the first 12 months.[8]

Our competitors also offer a range of demand side flexibility rewarding tariffs.[9]

Meridian supports Option C4 to design shape related financial products that could allow industrial demand flexibility providers (or aggregators in the mass market) to be sellers. Having a standardised option 'on the shelf' will help potential demand side participants realise the benefits of flexibility without constraining the ability to negotiate alternative bespoke contractual arrangements with counterparties. Meridian encourages the Authority to develop any standardised financial products in close collaboration with the industry to ensure that the products will actually be of use to counterparties that want to manage their risk.

Meridian also supports low risk 'nudge' options like funded trials of demand side flexibility rewarding tariffs and technology (Option C5). Any levy or taxpayer funding of such a trial should be frequently reviewed to ensure the benefits to consumers outweigh the costs. For example, if activity of this kind is happening commercially and without additional funding, then the costs to consumers of a funded trial may be difficult to justify.

Meridian also agrees with MDAG that:

- consumers need better information about their options and the potential rewards of demand side flexibility (Options C15, C16); and
- several existing or planned initiatives should proceed with a focus on understanding and enabling the efficient use of demand side flexibility (Options C8, C9, C20, C13).

Strengthen competition

Meridian agrees that effective or workable competition is vital to the success of the wholesale market and to support the transition to a more renewables-based power system.

[6] https://www.meridianenergy.co.nz/for-home/ev-plan
[7] https://www.powershop.co.nz/get-shifty/
[8] https://www.powershop.co.nz/powerswitch/
[9] https://www.canstarblue.co.nz/energy/electricity-providers/night-tariffs-explained/

Comments on the proposed options to strengthen competition

Meridian strongly agrees that the focus should be on conduct-based measures in the first instance given the high costs, disruption and likelihood of unintended consequences associated with structural interventions. Several of the options proposed by MDAG could be described as no regrets options and Meridian therefore supports them as they may improve competition with minimal risk of unintended consequences or harm to consumers. These include:

- Development of a dashboard of competition indicators for flexibility segment of the wholesale market to monitor and assess how competition for flexibility is evolving (Option D1).
- Increasing the transparency of hedge information (especially non-base load hedges) covering offers, bids and agreed prices so that it is easier for participants to compare prices (Option D2).
- Development of a flexibility access code (non-price elements) to promote reasonable access to flexibility contracts (Option D3).
- Extension of the trading conduct rules to the hedge market (Option D4). This is a duplicate of one of the options proposed to ensure effective risk management and efficient investment, which Meridian comments on earlier in this submission.

The remaining options to strengthen competition are:

- A "back-up" option to require market making for shaped contract products (Option D5). This is a duplicate of one of the options proposed to ensure effective risk management and efficient investment, which Meridian comments on earlier in this submission.
- A "back-up" option to virtually disaggregate the flexible generation base of large generators (Option D7) by requiring the sale of "flexible contracts" mimicking the effect of physical disaggregation. Although the details are not clear, MDAG seems to have in mind only Meridian and Mercury as potential providers of these products. It is not clear why that would be the case rather than requiring all generators to sell a volume of contracts proportionate to their flexible generation base, particularly given the modelling assumed Genesis and Contact would have more or less the same market share of flexible hydro and thermal capacity as Mercury.[10]

For these options, we suggest that before they proceed, more work should be done to assess whether the identified options would provide net consumer benefits relative to the status quo

[10] MDAG Competition analysis, page 13.

and any other alternatives. As it stands, there seems to be relatively little evidence or analysis on which MDAG could positively recommend these options. We assume MDAG and the Authority would carry out this work and consult further if any options were considered worthy of being progressed. While MDAG proposes these as back up options if all else fails, MDAG should consider whether developing these options and putting timeframes against them would:

- divert the Authority's limited resources away from development of other options where the consumer benefits are clearer; and
- increase the risk that authorities jump to these options prematurely in the heat of any market events.

Comments on MDAG's further competition analysis

MDAG's earlier Issues Paper found the shift to a renewables-base system may strengthen competition in some areas. Meridian agrees. For example, batteries may increase competition in the provision of short-term flexibility services and some ancillary services. However, MDAG expressed a belief that competition may thin in other areas, specifically the provision of flexibility services for periods of a week or longer as fossil-fuelled plant retires leaving longer-term flexibility services more concentrated among parties with flexible hydro generation capacity, "all other things being equal".[11]

Meridian queries this view. It seems more likely that all other things will *not* be equal in the future. Nobody knows for sure how wholesale market competition will evolve. As MDAG acknowledges, new sources of longer-term flexibility are likely to emerge – potentially including flexible demand sources, a level of renewable over-build that leads to greater spill, pumped hydro storage, and / or thermal generation based on green gasses (biomass or hydrogen). It is therefore not clear to Meridian that a thinning of competition for longer term flexibility services is "likely".

As we said during the Authority's review of competition in the wholesale market, it seems more likely to Meridian that the future of the market will involve a range of diverse flexibility sources competing with hydro operators (including for longer-term flexibility). MDAG's proposals to lift demand side flexibility seem more consistent with this view of the future rather than one in which control of flexible resources becomes more concentrated.

[11] Options Paper, paragraph 10.7.

We agree the Authority must remain mindful of the need to promote competition as the market evolves. At the same time, we query whether it makes sense now to attempt to solve problems that may never arise. MDAG characterises Meridian's earlier submissions along these lines as advocating for a "wait and see" approach. While that is not unfair, we would prefer to describe this approach as requiring a reasonable level of certainty that a problem exists or will arise before putting in place regulation that could have unintended consequences and costs for consumers. MDAG acknowledges elsewhere that its "findings are not determinative because they are based on projections of the future"[12]. We agree. We also note that MDAG's modelling assumes 100 percent renewable electricity generation, and this seems unlikely to eventuate in the next decade.[13]

Looking in further detail at MDAG's theory of harm and modelling of a range of hypothetical hydro offer strategies:

- MDAG's modelling assumes *all* hydro generators with storage will adopt a strategy to increase spot price volatility in order to limit new generation entry and increase average spot prices. Unless all hydro generators with storage adopt this strategy it is not clear that an individual participant could have the future market impact that MDAG is concerned about. As MDAG acknowledges, its modelling is "unable to discern how sensitive price duration curves would be to offer behaviour of individual participants".[14]

- MDAG only assesses financial incentives on hydro generators, i.e. whether large generators with significant flexibility would face much "direct cost or disruption from raising the volatility of volatility". The analysis assumes that hydro generators are undeterred or uninfluenced by other types of incentive. This is in Meridian's view an unrealistic and inaccurate picture of actual generator behaviour. Generators are in reality strongly influenced by other factors such as:
    - the current trading conduct rules, which would prohibit offers that gave effect to a strategy of frequently changing storage management with the intention of increasing volatility, i.e. offers that would not be made in the absence of significant market power[15];

[12] Options Paper, paragraph 10.14.
[13] MDAG refers to the Climate Change Commission projection that renewable market share will be 96.5% by 2030. BCG has projected 98% renewable market share by 2030 and 99% through the 2030s and 2040s.
[14] MDAG Competition analysis, page 14.
[15] In Meridian's opinion, the Authority's monitoring team would be able to identify inconsistencies in a hydro generator's offers when there are not underlying changes in storage or other market fundamentals.

- section 36 of the Commerce Act which prohibits those with market power from engaging in conduct with the purpose, effect or likely effect of substantially lessening competition;
- the natural risk aversion of hydro generators that manage storage, which has been demonstrated historically (more on this below); and
- the reputational, political, and social license implications of being seen to manage or suspected of managing storage in such a way as to increase spot market volatility.

- MDAG also seems to assume that Meridian and Mercury could in future raise average wholesale prices by increasing volatility and limiting the build of new generation without provoking any competitive response from other generators. Even if this was true in relation to new entrants to the market (and, per the above, it seems unlikely), the MDAG analysis does not appear to consider the possible expansion responses of Genesis, Contact, Nova, Manawa, and Pioneer who as integrated parties may not be as affected by increased spot market volatility and would therefore presumably continue to compete hard with Meridian and Mercury.

Hydro generator risk aversion

Meridian has undertaken its own modelling to examine the cost and other implications (including price volatility) of different storage management settings. What seems clear from the modelling is that, historically, hydro generators have adopted a more conservative approach to storage management than might be predicted by looking purely at short-term financial incentives. The fear of significant consequences associated with reaching the bottom of storage lakes has long dominated hydro management in New Zealand, reflecting the significant reputational, political, and social licence risks associated with shortage – not to mention real consequences for lives and livelihoods. These risks consistently moderate other financial incentives to push storage more aggressively in a way which would also increase volatility.

These non-financial influences on storage management will remain in future and may even be exacerbated if there are fewer alternative sources of flexibility to replace thermal generation. These results, in combination with the points above about the regulatory and legal constraints that all generators operate under, suggest that the MDAG model of possible future hydro generator behaviour may be a relatively simplistic one.

Increase public confidence

Meridian unreservedly supports all of the measures proposed by MDAG to increase public confidence. A stocktake of existing measures may help to further improve MDAG's final recommendations. For example, the measures recommended could build on:

- the Electricity Authority's existing Market Insights work;
- briefings that MBIE and the Authority already prepare for Ministers on current and expected market conditions;
- the recent increases in resourcing for the Authority's monitoring and compliance functions, including weekly monitoring reports on trading conduct;
- Annual Reviews of independent regulators and oversight of those entities generally by the Minister and MBIE (i.e. a periodic warrant of fitness should aim to achieve something additional to these existing reviews).

Navigating the transition

MDAG has identified three risks to consider in relation to the transition away from thermal generation to a more renewable power system:

- operational coordination issues, especially poor commitment of slow-start thermal units;
- premature closure of existing thermal plant; and
- inadequate investment in new thermal plant.

Meridian agrees that *ad hoc* measures to address these risks should generally be avoided and that several of the options discussed in earlier sections will help to facilitate the transition. For example:

- improving forecasting information will assist with unit commitment decisions;
- reviewing shortage price values will ensure there are accurate price signals for unit commitment and investment decisions;
- a new ancillary service could reduce exposure to sudden large fluctuations in wind/solar output or fluctuations in demand; and
- investment signals will be improved through greater transparency of hedge information and the publication of the pipeline of new developments

Meridian sees the greatest risk in the transition to be the potential for insufficient investment in additional flexibility such as demand side response at scale or fast start thermal plant (whether fuelled by fossil or green gasses).

Getting the work done (processes and next steps)

MDAG has proposed a wide range of options to prepare the electricity market for a highly renewable future. The breadth of options reflects the expansion of the scope of MDAG's work to look beyond how price discovery would function in a 100 percent renewable power system, and also consider wholesale market design options in general in an increasingly renewable power system (regardless of how quickly or to what extent the market transitions to more renewable generation).

Below, we comment on the prioritisation of the options and the industry co-design approach to further develop the options.

Using co-design with stakeholder to further develop options

Meridian supports MDAG's suggestion that the Authority should consider co-designing several of the proposed options with the industry and wider stakeholders. We broadly agree with the options MDAG identifies as best suited to a co-design or hybrid approach.[16] Meridian would welcome the opportunity to work more closely with the Authority, industry, and other stakeholders at an early stage in the policy development process.

Prioritising the Authority's resources

MDAG has asked for submitters' views on the relative importance of the options and indicated that this would be a key input to the final recommendations paper.[17] As MDAG notes, the Authority may not be resourced to deliver the entire suite of options in the timeframes recommended. Prior to this MDAG paper the Authority had already sought an approximately 50 percent increase to its core operating expenditure.[18] Further requests for additional resources may be challenging for the Government given the levy increase would necessarily

[16] Options Paper, Table 20.
[17] Options Paper, paragraph 6.28.
[18] https://www.ea.govt.nz/assets/dms-assets/30/Final-2022_23-and-2023_24-levy-funded-appropriations-consultation-document1375503.1.pdf

flow through to consumers and would contribute to other cost of living pressures over the next few years.

In Meridian's opinion, the highest priority options with the most significant potential benefits for consumers would be:

- Options that address an immediate issue, particularly operational coordination during winter peaks in the near term, including:
  - Option A1 – Improve short-term forecasts of wind, solar and demand (which we understand the Authority is already working on); and
  - Option A4 – A new reserve product to cover sudden reductions from intermittent sources or sudden deviations from forecast demand (this would be very similar to the winter peak product proposed by the Chief Executives Forum in response to the Authority's consultation on solutions to promote consumer interests through winter 2023).

- Options that would have a low risk of unintended consequences and costs to consumers but may help to facilitate risk management and investment as well as promote competition, including:
  - Option B1 – Greater transparency of hedge information including non-base load hedges and covering bids and offers as well as agreed transactions;
  - Option B3 – Publish aggregated information on the pipeline of new developments, as well as better information on energy and capacity adequacy (we understand the Authority is already looking at this option and the option above on the back of the most recent papers on promoting competition in the wholesale market);
  - Option B5 – Develop standardised 'shape' contract product(s);
  - Option B6 – Develop a flexibility access code for non-price elements of bilateral hedge transactions (the recently established over the counter contracts industry working group may the right forum to help the Authority co-develop this option and the one above); and
  - Option D1 – Develop a dashboard of competition indicators for the flexibility segment of the wholesale market.

- Simple measures to lift demand side participation while still enabling a consumer-led transition and consumer choice, including:

- Option C1 – Monitor the provision and uptake of demand side rewarding tariffs (including automation of demand response);
    - Option C4 – Develop standardised shape-related contract products to reward demand side flexibility;
    - Option C5 – Provide significant funding for pilots/trials to kick-start dynamic tariff use;
    - Option C11 – Ensure distribution pricing reflects network needs; and
    - Options C13 and C14 – Provide information to help large users and households understand the benefits of demand side flexibility and make decisions.

- All Options to increase public confidence, which Meridian considers will potentially have a significant impact and at the same time be low risk and low cost.

Some of the other options under consideration may be more challenging and resource intensive to design and implement, include those options that would drive significant market making costs or potentially chill investment by forcing the sale of contracts at regulated prices and volumes. Development of such options should not be a priority for the Authority and, we suggest, should only occur if there is positive evidence of a problem to be addressed. The Authority would also need to establish that those options are superior to any alternatives and would lead to net benefits to consumers in the long term.

Next steps

We commend MDAG on the work it has done to date. We understand from paragraph 6.29 of the Options Paper that MDAG now plans to go to the next level in specifying preferred options and undertaking a more thorough evaluation of costs and benefits, to inform the Recommendations Paper in mid-2023. We would welcome any further opportunity to participate in that process.

It is imperative that the industry and other stakeholders work together with MDAG and the Authority to ensure the wholesale market continues to evolve in a way that best serves the needs of consumers.

Nāku noa, nā

Sam Fleming
Manager, Regulatory and Government Relations

Evealyn Whittington
Senior Regulatory Specialist

Appendix: Responses to consultation questions

1.	Do you agree that, weighing costs and benefits, our preferred options in Table 7 above are likely to best address the operational coordination issues described in that chapter? If not, why not?	Meridian agrees in respect of all the preferred options except for options A5 and A6 where we think further work is needed to understand the impacts on consumers. For further detail see our comments in the body of this submission under the heading "Keeping the lights on – How to ensure reliable and efficient operational coordination".
2.	What is your view of the proposed sequencing and timing of measures to strengthen operational coordination?	Meridian agrees options A1 to A4 should be progressed promptly and the Authority is working on some of these ahead of winter 2023. We agree that option A7 is less urgent. Meridian's comments on prioritization generally are in the body of this submission under the heading "Getting the work done (processes and next steps)".
3.	What, if any, other options should be considered to strengthen operational coordination?	Meridian supports several other options that are being considered by the Authority to promote consumer interests through winter 2023. For further detail see our comments in the body of this submission under the heading "Keeping the lights on – How to ensure reliable and efficient operational coordination".
4.	Do you agree that, weighing costs and benefits, our preferred options in Table 10 above are likely to best address the risk management and investment issues described in that chapter? If not, why not?	Meridian agrees in respect of all the preferred options except for options B2 and B8 where we think further work is needed to understand the impacts on consumers. For further detail see our comments in the body of this submission under the heading "Ensuring effective risk management and efficient investment".
5.	What is your view of the proposed sequencing and timing of measures to improve risk management and investment?	Meridian for the most part agrees with the proposed sequencing. However, option B5 and B6 should be brought forward ahead of changes to stress testing and the additional market making options where Meridian considers more work to be necessary to understand the impact on consumers.

		Meridian's comments on prioritization generally are in the body of this submission under the heading "Getting the work done (processes and next steps)".
6.	What, if any, other options should be considered to improve risk management and investment?	Meridian has not identified any other options at this time.
7.	Do you agree that, weighing costs and benefits, our preferred options in Table 13 above are likely to best address the demand side flexibility issues described in that chapter? If not, why not?	Meridian agrees in respect of all the preferred options. For further detail see our comments in the body of this submission under the heading "Lifting demand side participation".
8.	What is your view of the proposed sequencing and timing of measures to improve demand side flexibility?	Meridian for the most part agrees with the proposed sequencing. However, the partially supported "backup" options should be the lowest priority and not come ahead of work on other options. Meridian's comments on prioritization generally are in the body of this submission under the heading "Getting the work done (processes and next steps)".
9.	What, if any, other options should be considered to improve demand side flexibility?	Meridian has not identified any other options at this time.
10.	Do you agree that, weighing costs and benefits, our preferred options in Table 15 above are likely to best address the competition issues described in that chapter? If not, why not?	Meridian agrees in respect of all the preferred options. For further detail see our comments in the body of this submission under the heading "Strengthen competition".
11.	What is your view of the proposed sequencing and timing of measures to strengthen competition?	Meridian for the most part agrees with the proposed sequencing. Option D3 to develop an access code could be brought forward and we understand work is already underway. The partially supported "backup" options should be the lowest priority. Meridian's comments on prioritization generally are in the body of this submission under the heading "Getting the work done (processes and next steps)".
12.	What, if any, other options should be considered to strengthen competition?	Meridian has not identified any other options at this time but notes that considerable work has also been done by

		the Authority in its review of competition in the wholesale market.
13.	Do you agree that, weighing costs and benefits, our preferred options in Table 17 above are likely to best address the public confidence issues described in that chapter? If not, why not?	Yes, Meridian agrees.
14.	What is your view of the proposed sequencing and timing of measures to increase public confidence?	Meridian broadly agrees with the proposed sequencing. Many of these options will require ongoing efforts as well as initial consideration and implementation of processes.
15.	What, if any, other options should be considered to increase public confidence?	Meridian has not identified any other options at this time.
16.	Do you agree the measures in Table 18 should be prioritised to help ensure a smooth transition to a renewables-based system? If not, why?	Meridian agrees in respect of all the proposed measures with the exception of option B2 for market making of longer dated futures, which requires further work to understand the impacts on consumers. For further detail see our comments in the body of this submission under the heading "Navigating the transition".
17.	What, if any, other measures should be considered to facilitate a smooth transition to a renewables-based system?	Meridian has not identified any other measures at this time and agrees with MDAG that it will be important to address underlying issues rather adopt *ad hoc* or temporary measures to address symptoms.
18.	Do you agree with the proposed categorisation of how measures should be progressed between Code processes, market facilitation and hybrid approaches in Table 20? If not, why?	Meridian broadly agrees and would welcome greater involvement of industry in developing the options.