Promoting competition in the wholesale electricity market in the transition toward a renewables-based electricity system

Decision paper

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ELECTRICITY AUTHORITY
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Executive summary

Decisions on actions to promote wholesale market competition in the transition

Following a period of sustained high wholesale electricity prices since mid-2018, the Authority launched a review into competition in the wholesale market in March 2021 to consider if the electricity market is working for the long-term benefit of consumers.

The electricity sector is in transition towards being more renewables-based. This transformation brings opportunities, but also disruptions which may be very difficult for some market participants and consumers to manage, which may cause some to question whether the wholesale electricity market is indeed operating for the long-term benefit of consumers.

This Decision Paper sets out the Authority's decisions on the issues and proposed actions to promote wholesale market competition in the transition for the long-term benefit of consumers. Issues and proposals were set out in *Promoting competition in the wholesale electricity market in the transition toward 100% renewable electricity* (the Issues Paper), published on 12 October 2022.

After considering submissions on that paper, the Authority confirms its assessment set out in the Issues Paper that:

- the electricity market has served consumers well, and competition is most likely to deliver the best outcomes for consumers
- proactive trading conduct monitoring and enforcement, and promoting entry by new generation and more flexible demand and demand-side participation are currently the best ways to mitigate risks from market power in the transition
- structural reform options are currently not justified by the available evidence; these would be costly and may not be efficient, effective, or timely. By increasing uncertainty, they are also likely to stymie much needed investment in generation
- while fundamental structural reforms are not currently justified, some market settings will need to evolve to support the transition, and this is reflected in the Authority's wider work programme as well as specific actions canvassed in the Issues Paper.

In this paper, the Authority confirms which of the actions it set out in the Issues Paper it will take to further promote wholesale market competition in the transition. See Table 1 on page vi.

The decisions in this paper bring the Authority's current review phase of wholesale market competition issues to a close. The next phase is to implement the actions to promote wholesale market competition in the transition toward a renewables-based electricity system.

These actions will form part of the Authority's wider transition work plan, alongside actions that will result from the Market Development Advisory Group's (MDAG) work on supporting price discovery in a renewables-based electricity system, and other work streams (such as on future security and resilience and on regulatory settings for distribution networks).

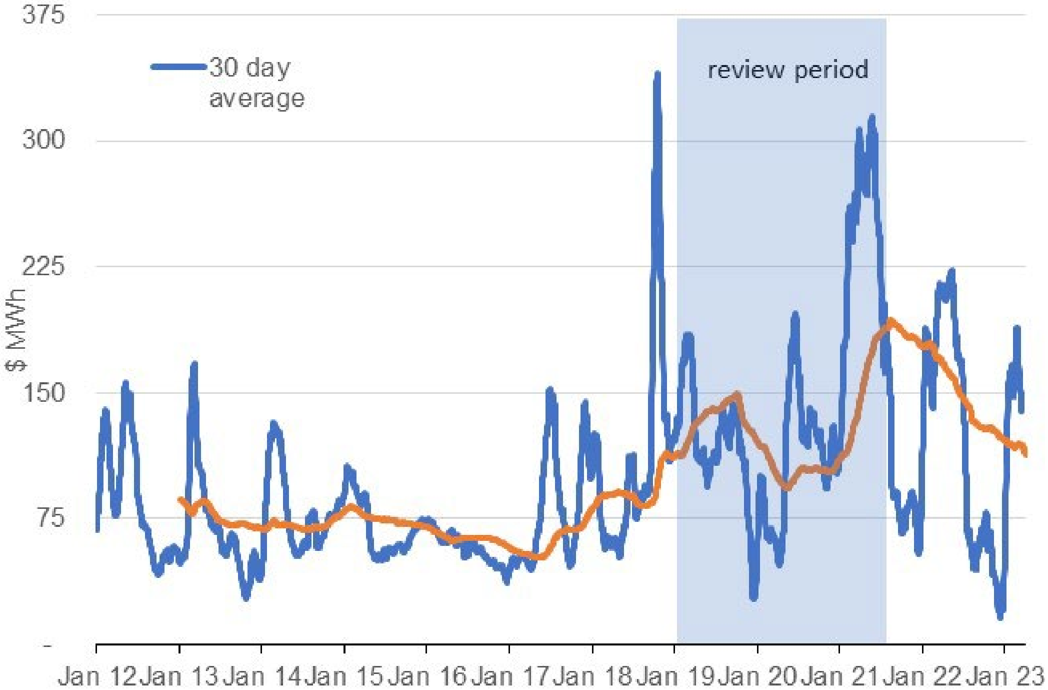
Wholesale electricity market prices reflect a sector in transition

Wholesale electricity spot prices rose in mid-2018 following the Pohokura gas field outage. Prices have generally remained well above the average level that prevailed prior to the outage.

The Authority's *Market monitoring review of structure conduct and performance in the wholesale market* published in October 2021 found that prices over the review period (January 2019 to mid-2021) had, at least to some extent, reflected underlying supply and demand conditions, but also that generators may have been exercising market power during the review period.

Since mid-2021, changes in average spot prices (which are trending down but remain elevated) have been explained mostly by underlying demand and supply factors. These include gas supply disruptions and uncertainty, hydro inflow conditions, carbon prices, increased fuel costs related to the war in Ukraine, and rising demand due to electrification, among other factors.

Figure 1 Average spot prices rose to well above their long run level



Source: www.emi.ea.govt.nz demand-weighted average daily prices (1 Jan 2012 to 3 April 2023)

In the Issues Paper, the Authority observed forward prices out to 2026 remain well above the cost of new supply. This is despite evidence of a promising pipeline of committed and actively pursued investment in new renewable generation.

Over time, it is anticipated that investment in new renewable generation will bring prices back down to the cost of new supply.

The Authority set out in the Issues Paper how the observed lag between price signals and new investment is in part linked to the time it takes to build infrastructure and factors such as consenting requirements, COVID-related supply chain issues, and cost escalation. But it is also linked to investment-impeding uncertainty around the NZ Battery project, the Gas Transition Plan, and the Energy Strategy, and insufficient commercially-viable renewable solutions to firm intermittent supply.

Having considered submissions, the Authority is satisfied with this explanation of the observed lag, and therefore also how removing or reducing impediments to entry of new renewable generation can be to the long-term benefit of consumers. As noted below, the Authority will continue to monitor the investment pipeline, and seek to address any material impediments (or invite other agencies to do so).

Strengthening settings to promote wholesale market competition in the transition

The Issues Paper examined whether regulatory settings aimed at promoting competition remain fit-for-purpose in the transition. It noted that:

- the anticipated very large expansion in wind and solar generation, and potential growth in demand response services, would likely strengthen wholesale market competition
- there is a risk that, during extended periods of cold weather with low wind and cloud, the market power of stored hydro generation could rise as fossil fuelled generation exits, unless and until alternative flexible generation enters.

Where submitters commented on these observations, they tended to agree there was a risk of weaker competition in the latter situation. Some submitted that this emphasised the role of gas and gas peakers in the transition. Others did not agree there was a risk of weaker wholesale market competition, because it was likely to be addressed by innovation and investment.

Given the identified risk, the Authority considered a range of market structure and conduct options to promote competition in the wholesale electricity market. The Issues Paper suggested that reliance on the current conduct-based measures plus entry by new supply to mitigate the exercise of market power remained broadly the appropriate approach in the transition to a renewables-based electricity system for the long-term benefit of consumers.

This view was based on evidence on the effectiveness of the new trading conduct rule and increased investment in monitoring, compliance and enforcement, as well as survey evidence of the scale of actively-pursued new investment by independent developers. The Authority also considered that more fundamental structural options were currently not justified by the available evidence, as they were unlikely to be efficient, effective, or timely.

The Authority, after considering submissions, confirms its assessment that the best approach to promoting wholesale market competition in the transition is to focus on proactive monitoring of trading conduct, enabling a greater and faster supply response, and promoting more demand flexibility and participation. Specific actions to do so are discussed below.

Thematic responses to matters raised in submissions

About half of the 32 submissions were supportive of the Authority's overall assessment; these submissions also tended to be supportive of the actions proposed in the Issues Paper.

Other submissions tended to disagree with the Authority's overall assessment. Five submissions focused on, and opposed, the Authority's proposal to expand its powers to require gas information disclosure.

Submitters raised a variety of matters, all of which the Authority has considered (even if they are not necessarily expressed in this paper). The Authority's thematic responses to common areas of concerns raised are summarised below.[1] (Endnotes are at Appendix B.)

- **Proposals would not resolve market power problems**.

  Some submissions thought the proposed actions were not strong enough and these submissions pointed to a need for structural reforms.

  The Authority did explore structural options, and having considered submissions it still considers that these do not offer the best response to the competition risks in the transition. The Authority considers that currently the best approach to constrain the exercise of market power in the transition is through trading conduct monitoring and enforcement, facilitating more and faster investment in generation, and enabling more responsive demand.

- **The analysis should address vertical integration**.

  Some submissions considered the Authority should also have addressed the effect of vertical integration on competition, pointing to perceived issues with gentailers' internal transfer pricing and with access to hedging arrangements (eg contracts).

  It is the case that the Authority's review was focused on competition in the wholesale market. This was because the issues that led to the review concerned the wholesale market. Earlier, the Electricity Price Review looked at both the wholesale and retail markets, and several of its recommendations either have been or are being implemented.

  The Authority has heard and acted on stakeholder concerns about internal transfer pricing.

  Since 2021 it requires gentailers to make annual disclosures of mass market internal transfer prices. At this stage, the Authority has not found evidence that transfer prices are too low.[2] The Authority will continue to monitor this area.

  With respect to access to contracts, as proposed in the Issues Paper, the Authority will in the first instance gather evidence to establish the nature and extent of any issue with access to offtake and hedge contracts. As discussed later in this document, the Authority has already progressed work in this area.

- **The Authority should measure economic profits**.

  Some submissions thought the analysis was incomplete as it did not measure or address what they perceive to be gentailers' excess profits.

  The Authority notes that its review did include an analysis of costs and prices, and trends in gentailers' financial results.

  However, as is the case with other indicators, profit measures are not unambiguous indicators of the presence or absence of the exercise of market power. For example, it is not uncommon or 'wrong' that firms with some competitive advantage (such as lower cost generation technology) earn profits above 'normal returns'. The Commerce Commission made the same observation in its market study into the retail grocery sector.

  This is one of the reasons that the Authority is emphasising the promotion of competition, particularly through entry by new generators, as this will work to eliminate economic profits over time, while preserving market incentives for the long-term benefit of consumers.

- **Marginal pricing and carbon pricing result in windfall gains and hinder the transition.**

  Some submissions thought it problematic that renewable generators are paid the market clearing price when it is higher than the price at which such generators would be willing to supply. As carbon pricing further increases the market clearing price, some submissions raised further concerns that this may discourage electrification and that it provides renewable generation with windfall gains.

  Marginal pricing is central to many markets, and it is well-established that under competitive conditions it delivers the greatest benefits to consumers in the long-term. That is, marginal pricing drives efficient production and consumption outcomes not only at any point in time, but also over time, by signalling opportunities for innovation and competitive entry.

  The Authority's Issues Paper and MDAG's recent work on price discovery identified opportunities to strengthen aspects of the wholesale electricity market in the context of the transition to a renewables-based electricity system. But the Authority considers marginal pricing remains a sound and efficient foundation for the electricity spot market in the transition and beyond.

The Authority agrees with submissions that higher wholesale electricity prices could affect firms' business cases for electrification. However, carbon pricing applies across the economy as a deliberate part of climate policy. It should therefore not inhibit efficient electrification, as carbon prices apply equally to fossil fuels used in generation and in transport and industrial processes. The cost gap between fossil fuelled and renewable generation due to carbon pricing provides incentives for innovation and investment in renewable electricity generation.

- **The Authority should not be able to require gas supply information from non-participants.**

  Over a third of submissions opposed this proposal, including because of concerns about commercial confidentiality and that it may lead to gas contracted to non-participants being diverted to the electricity market in dry years.

  The Authority acknowledges the points raised by submitters on this topic. It considers it remains important that this information gap is filled, to support efficient price discovery and resource allocation, dry year risk management, and trading conduct monitoring. To be clear, there is no proposal to interfere with commercial contracts as some submissions fear. As detailed below, the Authority will work with MBIE when it explores options to improve the availability of gas supply information.

Actions to constrain the exercise of market power and facilitate entry by renewables

In the Issues Paper, the Authority considered a range of possible approaches to strengthen competition in the wholesale electricity market – in particular to constrain the risk from the exercise of market power and to facilitate more and faster entry by renewable generation.

The Authority considered submissions on the proposed actions, as well as whether the actions would promote the Authority's main statutory objective[3], by applying the following criteria:

- Effective – promotes competition / constrains the exercise of market power in a material way, for the long-term benefit of consumers
- Efficient – provides clear price signals to consumers and generators and incentives for entry (and exit) and innovation, or reduces transaction costs
- Timely – is capable of having an impact in the near term (between now and 2030), for the long-term benefit of consumers
- Durable – promotes confidence in wholesale electricity market outcomes, and is operating for the long-term benefit of consumers
- Value – is expected to result in benefits exceeding costs over time.

Where submissions commented on these evaluation criteria, they generally agreed they were appropriate.

Only a subset of submissions offered explicit views on all or even some of the proposed actions. Where submissions did comment, there was greater divergence in views on the proposals to:

- require disclosures on gas availability, as briefly discussed above
- bring forward government decisions on the Gas Transition Plan, NZ Battery project, and Energy Strategy. Submissions agreed lingering uncertainty was an issue, but some also noted that it was important that these projects were done right
- consider pro-competitive (eg use-it-or-lose it) conditions on resource consents. Submissions called for caution given the risk of unintended consequences.

Table 1 summarises the actions that the Authority has decided to progress, or that it considers are for other agencies to consider. These decisions reflect feedback from submissions (such as on disclosure of gas information), as well as that some actions proposed in the Issues Paper have now been completed (such as work to prohibit inefficient price discrimination in very large contract) or overtaken by events, and thus have been removed from the list. Further details on the actions and any changes are detailed in Table 2 in Chapter 3.

Table 1 Actions to promote competition in the transition

Steps the Authority is taking
To constrain the exercise of market power the Authority will: • continue proactive monitoring and enforcement of trading conduct in the spot market, and investigate the application of trading conduct rules to the forward market • investigate mechanisms to accelerate the development of the demand response market (in addition to its current work programme directed at this, eg, real time pricing and empowering consumers to participate in the electricity system in new ways) • clarify disclosure requirements (and consider amending the Code to provide certainty about such requirements) about current or expected constraints that could impact generation capacity, and arrange a centralised location for disclosure • explore better information sharing processes and obligations with the Commerce Commission on any information the Authority collects that may raise concerns about restrictive trade practices, collusion, or misuse of market power
To facilitate investment in new renewable generation the Authority will: • undertake regular monitoring of progress on generation investments, and an annual update of the investment pipeline and impediments • regularly collect information on offtake and 'firming' agreements (and if feasible declined requests) to understand and build the evidence base about the nature and scale of current and emerging access issues reported by developers of new generation • improve the Electricity Hedge Disclosure System[4] to improve its functionality and make contract details more transparent • investigate and test the case for providing or requiring longer-dated futures (for instance products traded on the ASX) • analyse thermal generation transition risks in the context of demand to 2030, its role in hydro firming and more prevalent solar and wind generation, and options to mitigate transition risks

Actions the Authority invites other government entities to progress
To constrain the exercise of market power, the Authority invites: • MBIE to progress work to improve disclosure of information on availability of gas for electricity supply to support efficient price discovery and resource allocation, dry year risk management and trading conduct monitoring, with input from the Authority and the Gas Industry Company **To facilitate investment in new renewable generation, the Authority invites:** • MBIE to bring forward the completion of the Gas Transition Plan, Energy Strategy, and NZ Battery project, as reduced uncertainty would contribute to more renewable generation investment, and so lower prices, sooner • MBIE to produce an *Annual Electricity Generation Investment Opportunities* report, targeting international developers, with input from NZ Trade & Enterprise, Transpower, the Electricity Authority, Overseas Investment Office, and Ministry for Environment • MBIE to investigate the merit of providing a one-stop shop for overseas investors in renewable electricity generation, to help navigate and streamline the regulatory requirements and agencies, and advice on relevant stakeholders they should engage with • MBIE and the Ministry for Environment to promptly complete their work to strengthen national direction for renewable electricity to inform local planning and resource management consenting. This should reflect the government's 100% renewable electricity aspiration, electrification and renewable energy goals, and the implications for the amount of investment in renewable generation that needs to occur • Transpower to publish connection studies to further streamline the connection application process.

Next steps

This Decision Paper brings the current formal review of wholesale market competition issues that commenced in 2021 to a close, and the Authority now moves to implementing actions it has identified to promote wholesale market competition in the transition toward a renewables-based electricity system, for the long-term benefit of consumers.

These actions will form part of the Authority's transition work plan, alongside actions that will result from the Market Development Advisory Group's (MDAG) work on supporting price discovery in a renewables-based electricity system, and other work streams (such as on future security and resilience and on regulatory settings for distribution networks).

More generally, given the Authority's statutory objectives and role, the Authority will (re)consider further options to strengthen wholesale market competition if new information arises on the exercise of market power or impediments to competitive entry by new generation, as part of its monitoring or its activities and investigations in other contexts. This includes considering any alleged Code breaches that are brought to the Authority's attention and/or referring appropriate matters to the Commerce Commission.

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Tables

Figures

1. Authority seeks to promote competition in the transition

1.1. This paper sets out the Authority's decisions on its forward-looking assessment of wholesale electricity market competition and proposed actions as set out in the Issues Paper, *Promoting competition in the wholesale electricity market in the transition toward 100% renewable electricity* (the Issues Paper), published on 12 October 2022.[5]

1.2. This Decision Paper also provides a thematic summary of, and response to, the key matters raised in submissions on the Issues Paper.

2. Submissions

2.1. The Authority received 32 submissions plus accompanying documents, following an eight-week consultation period. Submissions are published on the Authority's website.[6]

2.2. Two submissions (Contact Energy, Manawa Energy) proposed there should be cross-submissions. The Authority did not consider cross-submissions were necessary, given the nature of the options being considered, and because it did not consider that the matters set out in submissions were such that further feedback would assist the Authority.

2.3. About half the submissions (from gentailers, generators, developers and electricity industry forums) were supportive of the Authority's overall assessment.

2.4. Submissions from consumers, large users and independent retailers tended to be critical, and generally favoured structural reforms or more analysis because they considered:

(a) conduct monitoring and proposed actions would not resolve market power problems

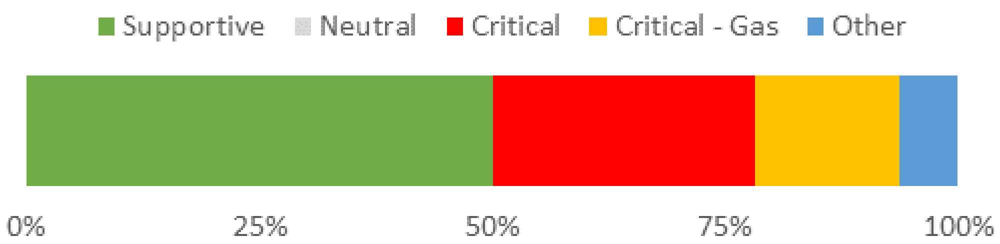
(b) the Authority should address the effects of vertical integration on market performance

(c) competition is stymied because independent generators and retailers are not able to access contracts and hedge products with gentailers.

2.5. Five submissions from sellers and large users of gas focused on – and strongly opposed – the proposal to allow the Authority to require gas information disclosures by parties that are not electricity market participants. They generally did not comment on other matters.

2.6. Figure 2 provides a visual impression of the general sentiment expressed in submissions.

Figure 2 Submissions' general sentiment on the Issues Paper



3. Feedback on the Authority's diagnosis and actions

Issues Paper examined whether settings were fit for purpose

3.1. The Authority's main propositions set out in the Issues Paper were that:

(a) the electricity market has served consumers well, and competition is most likely to deliver the best outcomes for consumers

(b) proactive trading conduct monitoring and enforcement, promoting more and faster entry by new generation, and more flexible demand and demand-side participation are currently the best ways to mitigate the exercise of market power in the transition

(c) structural reform options are currently not justified by the available evidence; these would be costly and may not be efficient, effective, or timely. By increasing uncertainty, they are also likely to stymie much needed investment in generation

(d) while fundamental structural reforms are not currently justified, some market settings will need to evolve to support the transition, and this is reflected in the Authority's wider work programme as well as specific actions that were proposed in the Issues Paper.

3.2. The Issues Paper (and supporting documents released at the same time) presented evidence on the effectiveness of the new trading conduct rule and its implementation, and evidence on a stronger pipeline of investment in new renewable generation and impediments to such investment.

3.3. It described the role of market competition in promoting the long-term benefits of consumers and that, recognising that markets are not perfect, one of the limbs of the Authority's (now main) statutory objective is to promote competition.

3.4. In the Issues Paper the Authority also explained that competition is not constant over time; adjustment to changes in demand and supply conditions is not instantaneous or orderly. Adjustments can take time. It stands to reason that this is particularly the case when a sector is experiencing or is on the cusp of a transformation and depends on large infrastructure build.

3.5. Transformation brings opportunities, but the Authority acknowledges that the inevitable disruptions may be very difficult for some market participants and consumers to manage, and that this may cause some to question whether the wholesale electricity market is indeed operating for the long-term benefit of consumers.

3.6. The Authority observed: "For consumers to be able to be confident that [market adjustments] are at work for their long-term benefit, however, does rely on there being appropriate market structures, unimpeded entry and exit by firms, effective market conduct rules, and the capacity to monitor and enforce compliance with the rules." (p8)

3.7. As such, the Authority launched a review into competition in the wholesale electricity market in March 2021 after sustained high electricity prices since mid-2018. The 2022 Issues Paper then analysed a range of market structure and conduct options to further promote competition in the wholesale electricity market, acknowledging that:

(a) monitoring of trading conduct, while effective, may not be able to detect more subtle exercise of market power

(b) market power of generators with stored hydro may increase during extended period of low wind and sun when fossil fuelled generation exits, unless and until viable green-peaker solutions are installed

(c) while the pipeline of net new renewable generation investment is encouraging, the time lag between price signal and sufficient entry is longer than standard benchmarks, which weakens the near-term discipline provided by the threat of competitive entry on parties with market power.

Submissions on the Authority's overall assessment

3.8. This section summarises feedback on the Authority's overall assessment, as briefly captured in the above section. It also sets out the Authority's response to the main areas of concerns and critiques raised in submissions.

3.9. Having considered submissions, the Authority confirms its overall assessment as set out in the Issues Paper about the best approach to promoting wholesale market competition in the transition, for the long-term benefit of consumers.

3.10. Chapter 3 addresses decisions on specific actions.

3.11. About half the submissions were generally supportive of the Authority's overall assessment, even if they may have disagreed with some specifics or considered that the wholesale electricity market does nevertheless need to evolve in the transition.[7]

3.12. For example, "Meridian broadly agrees with the approach taken by the Authority in its latest issues paper for the review of competition in the wholesale market. … Meridian considers such an approach to be uncontroversial and orthodox as a matter of economics. The approach is also consistent with the Authority's statutory objective …" (p. 4)

3.13. However, Meridian (pp 40-48) disagreed with the Authority's view that there was some evidence that generators may have exercised market power during the review period.[8]

3.14. Other submissions tended to disagree with the Authority's overall assessment, as discussed in more detail below.[9] For example, Winstone Pulp International "do not share the EA's faith in the current market design and structure, and consider there is evidence to warrant more urgent and meaningful action." (p1)

3.15. Five submissions primarily commented on, and strongly opposed, the Authority's proposal to require gas information disclosure.[10]

Feedback on some of the key issues identified in the Issues Paper

3.16. To explain the Authority's decisions, this section reflects on submissions on the key matters that were identified in the Issues Paper, namely:

- competition may weaken during extended times when intermittent generation cannot run
- there are impediments to generation investment
- the lag in investment is not due to anticompetitive behaviour to discourage entry
- it is appropriate to continue to rely on current conduct-based measures in the transition.

Risk of weaker competition during extended times when intermittent generation cannot run

3.17. Where submissions commented explicitly on this statement, they tended to agree with the Authority that there was a risk of weaker competition during extended periods when demand is high but intermittent generation cannot run.[11] [12]

3.18. Some submissions did not agree this was an issue, for example, because it would likely be addressed by innovation and investment.[13] Genesis emphasised security and reliability and the need for ensuring the availability of back-up thermal generation. Energy Resources Aotearoa and Nova highlighted the role of gas in the transition, Nova noting gas peakers can provide "competition to the concentrated ownership of controlled hydro storage." (p1)

3.19. Meridian considered that, even if market power became more concentrated, this could be managed through monitoring trading conduct, and that the Authority should prioritise its enforcement. EPOC similarly emphasised the importance of close monitoring and enforcement.

3.20. MEUG (p1) expressed concern that the Authority's assessment might imply that market power does not need to be considered until the sector gets much closer to 100% renewable generation (as addressed further below).[14] The Authority does not share MEUG's concern, given existing market design features aimed at promoting competition as listed in the Issues Paper, the increased investment in monitoring of trading conduct and enforcing compliance, as well as the actions the Authority has proposed to mitigate particular risks of increased market power ahead of time.

Impediments to generation investment

3.21. The Issues Paper identified a range of impediments to generation investment. Submissions that commented explicitly on this topic tended to confirm the impediments identified in the Issues Paper.[15]

3.22. For example, Genesis submitted "We agree that the impediments to the development of new renewable generation by existing and new entrants arise from a range of factors such as: uncertainty arising from the NZ Battery initiative and the Tiwai aluminium smelters future; grid connection resourcing and process constraints; and the time required to obtain Resource Management Act (RMA) consents. This is consistent with other views." (p 3) Nova also mentioned government policies discourage the building of gas-fired peakers.

The lag in investment is not due to anticompetitive behaviour to slow down investment and discourage entry

3.23. The Issues Paper had noted that, while the pipeline of investment was encouraging, entry was slow, and that this reflected the nature of investments, as well as uncertainty and consent requirements – rather than anticompetitive behaviour. Submissions that commented explicitly on this proposition tended to agree with the Authority's analysis that the lag between price signal and investment was not due to anticompetitive behaviour.[16]

3.24. For example, Meridian submitted "it would be poor strategy to forego a growth opportunity and market share. There is more than enough competition from other incumbent generators and new entrants such that if Meridian does not invest then others will grasp the opportunities. A strategy to delay investment would be ineffectual…" (p14)

3.25. These submissions pointed to the role of market and policy uncertainty and various regulatory impediments, including those identified by the Authority.

3.26. Meridian said another potential reason for the lag was that generators may have scaled back their generation development teams and let new generation options lapse during the sustained period of low demand growth in the prior decade.

3.27. A few submissions disagreed, because they considered that the gentailers' oligopoly makes it difficult for competition to enter, and that gentailers have incentives to slow the rate of investment to maximise short term profits.[17]

3.28. Winstone Pulp International, with reference to high forward prices, suggested that "A market which has not responded to very high price signals after a seven-year lag (at least) is dysfunctional … ." (p2)

3.29. The Authority agrees it would be desirable if investment by new entrants was faster. The Issues Paper identified actions to facilitate this. However, the Authority considers that the current pipeline of investment (including a very significant portion from non-incumbents) is not consistent with anti-competitive behaviour holding back entry. Instead, other factors are slowing the conversion of opportunities to commissioning.

3.30. The persistence of high forward prices also indicates that the considerable generation investment that is in the pipeline will not displace high-cost thermal generation in the near term. This is likely due to technical and commercial constraints (no green peakers) and the impediments discussed above. Those impediments include uncertainty, which Winstone Pulp International agrees is a fundamental barrier to private sector investment (p3).

3.31. As such, the Authority does not agree that the wholesale market is dysfunctional, though it does agree there is scope for removing or reducing impediments to new generation investment and has identified actions it and other agencies can take to do so.

Continued reliance on current conduct-based measures to mitigate the exercise of market power remains broadly appropriate in the transition

3.32. Submissions that commented explicitly on this topic generally agreed (and some strongly agreed) with the Authority that:

- reliance on conduct-based measures and entry by new supply remains appropriate in the transition
- there were opportunities to strengthen settings and speed up the supply response
- fundamental structural reforms were not currently justified.[18]

3.33. As is set out in greater detail in the next section, some submissions disagreed or disagreed strongly with the Authority's views on this topic, suggesting the measures were insufficient and structural changes were needed, or needed to be considered.[19] The Authority disagrees with those submissions – more detailed explanations of the Authority's response to those submissions are set out below.

3.34. The Authority does however agree with those submissions that thought that, while fundamental structural reforms are not currently justified, some market settings will need to evolve to support the transition. This is reflected in:

- the Authority's *Energy Transition Roadmap*
- the actions from the Issues Paper the Authority has decided to take forward
- any actions that will follow from MDAG's recommendations on options to support price discovery in a renewables-based electricity system, and other Authority projects, such as on future security and resilience and regulatory settings for distribution networks.

4. Responses to main concerns raised in submissions

Proposals would not resolve market power problems

4.1. Some submitters thought the proposed actions were not strong enough, only addressed symptoms and not the underlying problem, and that structural reforms are needed, or "need to be considered given the scale of the problems the Authority has identified."[20] Some of these submissions proposed specific measures.

4.2. For example, Electra suggested a cap on spot prices and a separate capacity market to support new entrants; Octopus Energy strongly suggested measures such as: an automatic pricing adjustment 'whenever a generator is considered strategic' (that is, may be able to exercise market power); regulated contract market auctions to give new entrant generators access to fairly-priced risk management products; and arms-length trading arrangements for gentailers. Winstone Pulp International suggested a government-backed reverse auction scheme for 15-year power purchase agreements.

4.3. The Authority acknowledges these submissions and appreciates the contribution of concrete proposals. On balance, it considers more and faster investment in generation and proactive trading conduct monitoring is currently the best approach to constrain market power. Its assessment takes into account that the new trading conduct rule has been shown to be effective[21], the Authority has bolstered its monitoring, compliance, and enforcement functions, and that there is a strong pipeline of new generation investment.

4.4. The Issues Paper did explore and assess various ex ante measures and structural options, including options along the lines suggested by submitters. The Authority's assessment of those options was informed by the current lack of conclusive evidence of any sustained exercise of significant market power, its analysis of the competition risks in the transition, the considerations summarised in para 2.37 above, and wider considerations such as those in para 2.34 above.

4.5. The Authority considered ex ante measures and structural options would not offer the best response in the transition. That is, they are not likely to be for the long-term benefit of consumers because they are likely to be inefficient (price caps), or their effectiveness is unclear, their implementation is unlikely to be timely, and they carry material risk of unintended consequences (for example, if they discouraged needed investment).

4.6. However, the Authority notes that the Issues Paper did suggest that – while there was currently no evidence to pursue it – MBIE could in future reconsider the option of virtual asset separation, if investments in generation and innovations on the demand side are not forthcoming or if monitoring uncovers repeated or sustained exercise of significant market power.

4.7. This remains an option, though the Authority still considers there is currently no evidence to pursue it and would be concerned about any chilling effect on investment if this option were to be developed further at this stage.

4.8. The submission from Haast & Independent Retailers criticizes the Authority for only making generalised comments about possible negative impacts of structural reforms without assessing the benefits. The Authority agrees it only set out its general views on what the likely considerations would be with respect to structural options. The Authority was transparent about this and explained why that was so (para 6.40 of the Issues Paper). Having said that, the Authority's high-level assessment did also address potential benefits; in terms of structural reform, it was explicit that the likely benefit (effectiveness) was uncertain – structural reform may improve competition, or it may not.[22]

4.9. Submissions have not presented the Authority with new evidence that caused it to change its preliminary views on this topic.

The analysis should address vertical integration

4.10. Some submissions considered the Issues Paper and proposed actions fall short as they did not address the effect of vertical integration on competition, because of gentailers' internal transfer pricing and unequal access to hedging arrangements.[23]

4.11. The Authority does not agree with these submissions on this point.

4.12. The Authority previously addressed submissions on whether its competition analysis should include the retail market in its *Response to Submissions on the 2021 Market Monitoring Review* (p11). That analysis was released with and informed the Issues Paper. It explained that the issues that led to the review concerned competition in the wholesale market, and that the retail market was not in scope (albeit that vertical integration was not ignored – it was one of the Authority's suite of indicators). That paper also noted that the Electricity Price Review published in 2019 looked at both the wholesale and retail markets and made several recommendations that either have been or are being implemented. The impact of these changes will be assessed as part of future work programmes.

4.13. Haast & Independent Retailers (p8) submitted that, given the Authority's analysis had not been able to explain all increases in wholesale market prices during the review period by demand and supply conditions, and as those increases were not yet (or not yet fully) reflected in retail prices, then "[t]his, at minimum, provides prima facie basis for concerns that there is a price squeeze issue and about the health of competition in the retail market and justification for investigation."

4.14. The Authority has heard and acted on submitters' concerns about perceived issues with gentailers' internal transfer pricing. Since 30 November 2021 gentailers have been required to disclose each year their mass market internal transfer prices and the underpinning methodology. The Authority publishes a dashboard with this information.[24] This shows that internal transfer prices are broadly consistent with a range of benchmark prices and to-date the Authority has not found evidence that internal transfer prices are too low. [25] The methodologies suggest that, in principle, any participant could replicate the internal transfer prices that gentailers apply.

4.15. The Authority will continue to monitor this area, including retail margins. Further, the Authority considers that currently the best approach to address these concerns is through monitoring and enforcement of trading conduct, and facilitating the entry of new renewable generation investment.

4.16. In addition, the Authority notes that consumers and businesses with specific concerns about a business's misuse of market power, for example, can make a complaint to the Commerce Commission.

4.17. In terms of concerns about unequal access to contracts and derivatives, reforms to market-making and market-making margins in recent years directly addressed concerns about access to and pricing of exchange traded contracts.

4.18. The Issues Paper also observed that the pipeline of new generation investment does not suggest that access to contracts currently presents a barrier to entry for new supply, though the Authority was open to the possibility it could become an issue in future.

4.19. With this possibility and previous statements by some market participants about unequal access in mind, the Issues Paper included a proposal for the Authority to regularly gather information on contracts to understand the nature and extent of any problem around generator and retailer access to contracts. This is a necessary step as part of problem definition that must occur ahead of developing any possible interventions.

4.20. Related to this, market events led the Authority to issue a request for voluntary information on off-market transactions in October 2022, targeted at participants likely to have limited or no access to the ASX futures exchange.[26]

4.21. The small number of responses to this request indicated mixed experience with respect to baseload contracts, and relatively greater difficulty for non-baseload contracts.[27] Subsequently, the Authority has facilitated the establishment of an industry-led working group to make improvements to how this market operates. In addition, MDAG is consulting on related options for risk management products, including an access code.

The Authority should measure economic profits

4.22. Some submissions thought the Authority's analysis was incomplete as it did not address claims of gentailers earning excessive profits.[28]

4.23. MEUG submitted the Authority should use Economic Value Added (EVA) analysis to quantify the extent of market power to complement its indicative market power metrics and monitoring of offer behaviour (p3).

4.24. To draw attention to the potential scale of economic profit, MEUG provided its own economic profit estimates for Contact Energy and Meridian Energy concluding "… it is likely the effect of market power by the four [gentailers] is around the level found by the Commerce Commission in the retail supermarkets market study." (p5)

4.25. The Authority acknowledges MEUG's efforts to present data to quantify its concerns about the extent of market power. Nevertheless, the Authority does not agree these estimates obviously indicate the exercise of market power, considering that:

(a) in competitive markets with marginal pricing it is not uncommon or 'wrong' that firms with some competitive advantage (such as lower cost generation technology) earn profits above 'normal returns' for as long as their advantage endures. The Commerce Commission made the same observation in its market study into the retail grocery sector.[29] Hence the importance of promoting competition, including by addressing barriers to entry, to eliminate such economic profits over time for the long-term benefit of consumers.

(b) comparing profits to the historic cost of assets – as is the case in MEUG's EVA analysis – does not recognise the current opportunity cost or market value of assets or capital tied up in a firm, which seems the more relevant benchmark. The retail supermarkets market study also used the market value or opportunity cost of assets, not historical cost.[30]

4.26. More generally, the Authority notes it did consider generators' profit. Its *Market Monitoring Review* included an analysis of costs and prices and trends in gentailers' financial results. This was one of a suite of structure, conduct, and performance indicators to diagnose, understand and track competition and market power, because profit measures are not unambiguous indicators of the exercise of market power.

4.27. The Authority remains open to consider alternative indicators of generators' economic profit.

Marginal- and carbon-pricing result in windfall gains and hinder the transition

4.28. Some submissions took issue with the energy-only marginal pricing model.[31] A few submissions expressed concerns that generators earn excess profits when they are being paid a market clearing price that is higher than the price at which they would be willing to supply. Others thought carbon pricing adds to this, providing windfall gains for renewable generation. A related concern was that higher wholesale prices risk disincentivising electrification.[32]

4.29. These concerns led the Consumer Advocacy Council to suggest the Authority undertake work to treat renewables and non-renewables separately in the wholesale market (p2), NZ Steel to suggest a re-examination of marginal pricing for the transition period (p3), and Winstone Pulp International to suggest that thermal generators be provided relief for ETS costs (p3).

4.30. However, other submissions considered carbon pricing had an important role to play in the transition by providing incentives for investment in new renewable generation – some noting any 'windfall gain' would be transitory.[33]

4.31. Meridian challenged the relevance of the notion of windfall gains in this context. "Generally, 'windfall gains' are understood to arise from an event that has caused profits to rise unexpectedly (the war in Ukraine being a recent example in European energy markets) as opposed to the logical outcome of long-term structural settings in the market that are operating as intended." (p33)

4.32. Marginal pricing is central to many markets, and it is well-established that under competitive conditions it leads to efficient outcomes for the long-term benefit of consumers.[34] Marginal pricing not only drives efficient production and consumption outcomes at any point in time, but also drives competition and efficient outcomes over time, by signalling opportunities for innovation and competitive entry.

4.33. These dynamic forces are particularly important in ensuring the electricity market works for the long-term benefit of consumers. Having separate markets for different technologies, as some submitters have suggested, may appear attractive in the short-term, but the Authority considers that it would undermine incentives for innovation and entry by renewable generation to replace now more expensive non-renewable generation technologies. That would not be for the long-term benefit of consumers.

4.34. The Authority considers marginal pricing remains a sound and efficient basis for the electricity spot market in the transition and beyond. Alternatives to marginal pricing, such as 'pay as bid', are more likely to result in inefficient outcomes in the short- and long-run, because of strategic pricing incentives.[35]

4.35. MDAG's investigation into price discovery under 100% renewables did not cause it to propose abandoning marginal pricing. Instead, MDAG pointed to the importance for spot prices to be able to function and reflect scarcity. In its options paper MDAG proposes complementary improvements, eg to the contracts market, but no great departures.

4.36. The Authority also considers that carbon pricing is doing what it is meant to do. That is, because fossil-fuelled thermal generators must pay the carbon price, but renewable generators do not face that cost yet receive the same market-clearing price, it provides incentives for investment in renewable electricity generation, as is being observed.[36] [37] [38]

4.37. While an increase in expected wholesale electricity prices may affect a firm's business case for electrification, carbon pricing per se should not inhibit efficient electrification, as such pricing applies equally to fossil fuels used in generation and in transport or industrial processes.

Authority should not be able to require gas supply information from non-participants

4.38. Over a third of the submissions opposed the proposal that section 46 of the Electricity Industry Act 2010 be amended to allow the Authority to require gas-supply related information from non-participants. These submissions cited concerns about regulatory over-reach, lack of a problem, commercial confidentiality, and regulator interference in gas contracts with non-participants in for example dry years.[39]

4.39. Some submissions supported improvements in upstream gas information. Contact considered MBIE should disclose more upstream gas market data and provided specific suggestions (p11-13). Manawa Energy also considered the information was "incredibly important for the efficient operation of the market" but questioned if it was appropriate for the Authority to compel non-participants. Meridian supported the Authority's proposal, but also submitted that the Authority should do more under its existing powers to improve disclosure by thermal generators on thermal fuel supply (p29).[40]

4.40. The Authority acknowledges the various points raised in submissions on this topic. It considers it remains important that this information gap is filled, to support efficient price discovery and resource allocation, dry year risk management[41], and trading conduct monitoring. To be clear, the information is not sought to be able to interfere with contracts, as some submissions fear. The Authority's aim is for it and the electricity sector to better understand gas supply (including storage infrastructure limitations and the overall availability of gas and how gas would be allocated to different users at times that a gas producer cannot meet contracted volumes) and market-based opportunities for trade in case of security of supply concerns.

4.41. MBIE has conveyed to the Authority that it agrees that improving access to information about the availability of gas could improve the performance of the electricity market, and has indicated other, potentially more effective, options exist (eg under the Gas Act or Crown Minerals Act) which it could explore.

4.42. The Authority will work with MBIE when it explores options to improve the availability of gas supply information.

5. Decisions on actions to promote wholesale market competition

5.1. This chapter sets out the Authority's decisions on the proposed actions to mitigate market power and actions to facilitate investment.

5.2. These actions should be seen in the context of the Authority's *Energy Transition Roadmap*, which is aimed at ensuring electricity market and regulatory arrangements provide a platform to enable the innovations and investments needed to accommodate electrification, more renewable generation, and new ways for consumers to participate.

5.3. The Authority will soon receive MDAG's recommendations on options for efficient price discovery in a renewables-based electricity system, which will complement the actions from the wholesale market review. Other work streams (such as on future security and resilience and on regulatory settings for distribution networks) are also under way.

5.4. The Authority will consider the relative priorities of the various initiatives from the wholesale market competition review and those other work streams as part of an integrated transition work programme.

Evaluation criteria

5.5. The Authority considered submissions on the proposed actions, and whether they would promote the Authority's main statutory objective, by applying the criteria set out on page v.

5.6. Where submissions commented on these evaluation criteria, they generally agreed they were appropriate.[42] The Authority has decided to apply the criteria unaltered.

General feedback on actions

5.7. Submissions that were generally supportive of the Issues Paper tended to offer explicit, and often supportive, views on the proposed actions.

5.8. Submissions that were generally critical of the Issues Paper tended not to offer explicit views on the proposed actions.

5.9. Figure 3 highlights that, where submissions explicitly commented on a proposed action, there were more divergent views on just a few proposed actions, namely to:

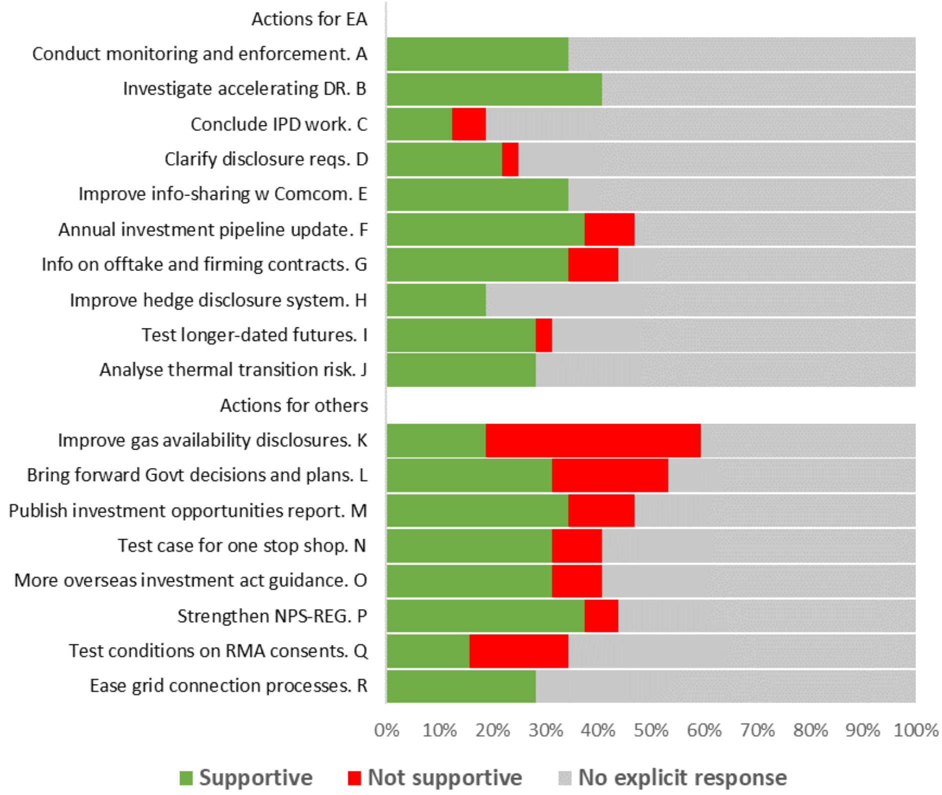
(a) require disclosures on gas availability – as discussed above

(b) bring forward government decisions on the gas transition plan, NZ Battery, and energy strategy – while submissions agreed uncertainty was an issue there was a concern that speeding up the work would undermine its quality

(c) consider pro-competitive (eg use-it-or-lose it) conditions on resource consents – submissions called for caution given the risk of unintended consequences.

Figure 3 Sentiment in submissions toward proposed actions

Note: The figure is intended to be indicative only of sentiments expressed, where submissions explicitly addressed a specific proposed action, or alternatively where submissions clearly stated they did support all (or did not support any) of the proposed actions.



6. Review of feedback on proposed actions

6.1. Table 2 below sets out the Authority's decisions on which actions to progress, highlighting the nature of submissions where these commented explicitly on proposed actions.

6.2. Some submissions provided detailed comment on, and potential solutions for, the Authority's proposed action to investigate mechanisms to accelerate the development of the demand response market. These are addressed in the following subsection.

Investigating mechanisms to accelerate the development of the demand response market

6.3. The Issues Paper states that market power is in part due to demand being relatively unresponsive to price in the short run. This suggests that making demand more responsive to price can help to mitigate the risk from market power.

6.4. From late April 2023, smaller purchasers are able to participate in the wholesale market as dispatchable demand, in a similar way that generators make offers. The Authority also has other work underway to empower consumers to participate in the electricity market in new ways.[43]

6.5. There was general support among those submitters who commented on the proposed actions for the Authority to investigate mechanisms to accelerate the development of the demand response market.[44]

6.6. Manawa Energy (p5) submitted it supported the Authority testing in a regulatory sandbox “the implications of preferred mechanisms to better assess potential of demand response prior to progressing major reforms to the market design … many other jurisdictions have struggled with efficiently integrating demand response into their wholesale market design.”

6.7. Some submissions provided detailed comments which the Authority addresses here.

6.8. In terms of increasing consumer participation:

(a) the Consumer Advisory Council is concerned that many residential and small business consumers lack the incentive and ability to change demand in response to prices, in part due to limited information on and access to time-of-use pricing. It makes various recommendations aimed at helping consumers manage their own supply and usage.[45]

(b) Wellington Electricity submit "A flexibility market will be needed to allow consumers to recognise the full value stack that can be generated from their controllable devices, and to ensure flexibility is available in grid and distribution network emergencies when those services are needed 'to keep the lights on.' " (p1)

6.9. In respect of these submissions, the Authority notes its current work on *updating regulatory settings for distribution networks*[46] and on distribution pricing is addressing matters relevant to enable the participation by consumers and flexibility traders, such as improved access to smart meter data, market access provisions, and standards for distributed energy resources.

6.10. Octopus Energy submits that vertical integration undermines the use of load shifting in the interest of consumers, because gentailers tend to be long on generation and can rely on discounted internal transfer pricing, rather than compete in the retail market. “To address this perverse incentive, we recommend arms length trading arrangements …” (p3).

6.11. Octopus Energy’s claim about discounted internal transfer pricing is addressed above – the Authority does not agree with that claim.

6.12. The Authority does agree with Octopus Energy that “Independent retailers have a strong incentive to activate load shifting” (p3). For example, retailers have an incentive to pay consumers for demand response to minimise or avoid their losses if they must buy at a high spot price and supply customers at a lower contracted price.

6.13. This incentive is not limited to independent retailers – generators and gentailers who have entered into fixed price contracts with other parties (including their own retail arms) also have an interest in demand response. For example, a generator can have agreements with their industrial customers for the latter to reduce their use when spot prices reach a certain level for some consideration, so that the generator can sell electricity at the higher prices. Such agreements help to allocate electricity to its highest value use.

6.14. As demand response can act as a hedge, it raises the question why the demand flexibility market is not more developed than it appears to be. Lack of a demand for it during an extended period of relatively low and stable prices may be one reason that participants have not invested more in demand flexibility services – with current hedging tools (ASX, vertical integration) being perceived as sufficient to manage their risks. Other factors may relate to technology and market design.

6.15. For example, dispatchable demand was implemented in 2012, but this targeted only large industrial users and suffered from limited uptake – likely also because the market was different then, as noted above. New technologies and changing market conditions, including the potential for greater spot price volatility as MDAG’s work on price discovery has found, can be expected to improve the value proposition of demand response.

6.16. Enhancements to dispatchable demand that went live in April 2023 will make it more reflective of the operational realities of large industrial processes, while dispatch notification is aimed at enabling demand side aggregators of demand response and generation to participate in the wholesale market.

6.17. On this, Contact Energy submitted that “demand response is held back by challenges around market access, contract length (term), and a lack of standardisation between retailers.[47] We recommend the Authority immediately begins a work programme to resolve these issues. This should include consideration of some form of wholesale demand response mechanism, like that implemented in Australia in 2021.” (p3)

6.18. Contact submits that market access issues are that retailers may already be hedged, may see flexibility traders as competitors rather than providers of value, or may not be able to agree on profit sharing with them. Term issues relate to standard contract terms being too short to guarantee the recouping of set-up costs, given customers switch retailers. The lack of standardisation between retailers is further said to make it hard to design a demand flexibility product that is resilient to customers switching retailers.

6.19. A wholesale demand response type scheme suggested by Contact for further consideration would, as Contact notes, impose centralised market arrangements, which avoids market participants having to settle these issues commercially.

6.20. The Authority is open to considering options that enable the efficient operation of the electricity sector and that promote competition – dispatch notification is a pertinent example – and the issues Contact raised are noted. However, in advancing investigations on any mechanisms to accelerate the demand response market the Authority will need to carefully consider if it would be consistent with its statutory objective to develop regulatory arrangements to address what are seemingly more commercial matters, unless there is also a clear market failure (such as excessive transaction costs that are unlikely to be solved through innovation).

6.21. Having said that, the Australian demand response scheme that Contact refers too has some advantages over other so-called negawatt schemes. The latter tend to overcompensate consumers by paying them the full wholesale rate per unit of demand response, which the Australian scheme does not appear to do.[48] This is because negawatt schemes proceed on the basis that a megawatt of extra generation is equivalent to a megawatt reduction in demand. While this is true from a system-balancing point of view, generation and demand response are *not* equivalent from an economic, or resource use, perspective.[49]

6.22. However, one of the key weaknesses of the Australian scheme that it shares with other such schemes is that it relies on establishing hypothetical baseline consumption levels against which to estimate the quantity of demand response. Apart from administrative complexity, this means payments would be made to consumers who would have reduced demand anyway or to those who are able to game the system (for example by taking actions that exaggerate the extent of their demand response to capture increased payments). This does not appear to be an efficient solution.

6.23. Fortescue Future Industry submits it “would like to encourage continued consideration of demand side options, particularly in terms of understanding the full value of the demand response." (p3)

6.24. The reference to the concept of ‘full value’ seems to refer, at least in part, to the idea that when a large industrial consumer decides to consume less in a market, then this would likely reduce the market price. This is then a benefit enjoyed by all other consumers, or at least those exposed to spot prices. (This effect is referred to in the literature as a ‘pecuniary externality’.) The implication appears to be that consideration should be given as to whether this benefit to all other consumers should be shared with the large industrial consumer.

6.25. While the Authority is open to the possibility that there may be market or regulatory gaps to address, it is not currently convinced that there is a gap to be addressed in this situation:

(a) in a competitive market, changes in spot prices reflect changes in supply and demand, that is, changes in the real cost of resources spent in generating electricity and changes in what consumers are willing to pay. All the relevant economic costs and benefits are reflected in prices:

(i) as a result resources can be taken to be allocated to their highest value use; there does not seem to be an efficiency rationale for further 'out-of-market' changes to prices or quantities

(ii) changes in prices due to changes in demand or supply are the effect of the market in action.

(b) in particular, in the situation described there are no technical externalities affecting third parties that may warrant some new mechanism, as there might be with unpriced or unregulated pollution for example

(c) from a total welfare perspective, in the situation described the sharing of benefits appears to be a matter of transfers, not efficiency gains. In fact, there is a risk that efficiency losses may result, as benefit sharing would in effect distort prices and quantities, and this in turn would promote further inefficient use and investment decisions

(d) there is already a contracts market for mutually beneficial trades: if a consumer has an option on volumes at a fixed price, it can seek to sell these volumes to a party that is exposed to a higher spot price, for example, at terms that would make both parties better off (and no-one else worse off).

6.26. Neil Walbran also favours exploring mechanisms to accelerate the development of the demand response market, proposing that all retailers be required to buy load control from distributors. Mr Walbran submits hot water load control is underused because existing ripple control lacks the ability to only turn off the water heating from customers of particular retailers. This creates a free-rider problem, which his proposal would address.[50]

6.27. The Authority is aware of innovative solutions currently being rolled out or tested that overcome the specific technical issues that caused the free-riding problem that Mr Walbran describes, as well as other ways to engage consumers in demand response.

6.28. More generally, rather than developing solutions that promote a particular technology, the Authority would prefer options to be technology-neutral, to avoid locking-in particular technologies or creating other distortions that stifle innovation and competition.

6.29. The Authority has welcomed all of the perspectives it has received to date on demand response issues. As noted below, the Authority intends to investigate mechanisms to accelerate the development of the demand response market.

7. Decisions on proposed actions

Table 2 Decisions on proposed actions

Note: Only some submissions commented explicitly on each of the proposed actions. Each option is rated indicatively from weak ○ to strong ● against the evaluation criteria as at the time of this decision paper. Where some will be the subject of further analysis, the final view on the assessment against criteria may change.

Actions for the Authority

A. Continue proactive monitoring and enforcement of trading conduct in the spot market, and investigate the application of trading conduct rules to the forward market.

MDAG is also consulting on proposal to extend the trading conduct rule to the hedge market.

There was limited comment on extending the trading conduct rule. Meridian submitted the case for it was likely limited, because of other safeguards that are in place and questions on how sector regulation would apply to non-participants. Manawa Energy suggested also considering coverage of the demand-side.

MEUG (p9) considered the area merits close monitoring because of concerns that independents find it hard to attract interest from major generators even with apparently attractive projects/power purchase offers.

Criteria	Effective ●	Efficient ●	Timely ●	Durable ●	Value ●

Decision Progress this investigation, as applying trading conduct rules to the forward market has the potential to constrain market power and increase confidence in the electricity market. See also action G.

B. Investigate mechanisms to accelerate the development of the demand response market (in addition to the Authority's current work programme directed at this, eg, real time pricing and empowering consumers to participate in the electricity system in new ways).

Submissions supported improving demand side flexibility and participation.[51] MDAG's options paper and the Authority's Winter 2023 work also address this topic.

Submissions on potential market challenges and options are discussed above.

Criteria	Effective ●	Efficient ●	Timely ○	Durable ●	Value ●

Decision Progress this investigation, as increased demand side flexibility and participation is likely to assist in disciplining market power and improve the efficient operation of the electricity market.

C. Conclude the current consultation on the proposal to prohibit inefficient price discrimination in very large contracts and, following the consultation process, determine whether to implement a disclosure, monitoring, and voluntary clearance regime.

This item is subject to its own consultation and decision process.

Criteria	Effective ●	Efficient ●	Timely ●	Durable ●	Value ●

Decision Removed from action list as this workstream has been completed.

D. Clarify disclosure requirements (and consider amending the Code to provide certainty about such requirements) about current or expected constraints that could impact generation capacity, and arrange a centralised location for disclosure.

The few submissions that commented on this proposed action tended to be supportive (eg Meridian), but also that it would depend on the specific details (eg Manawa Energy). Genesis was concerned about problem definition and compliance costs of increasing disclosure obligations but supported a centralised platform for disclosures.

The Authority has since completed a Post Implementation Review of wholesale information disclosure obligations.[52] One of its findings was that disclosures were made across a range of different websites, which may undermine the effectiveness of the disclosure regime. It also found there was scope to improve information on thermal fuel availability (see action K. below).

Criteria Effective ○ Efficient ○ Timely ○ Durable ● Value ○

Decision Progress as resources permit, as improved information disclosure arrangements have the potential to promote competition and the efficient operation of the wholesale electricity market.

E. Explore better information sharing processes and obligations with the Commerce Commission on any information the Authority collects that may raise concerns about restrictive trade practices, collusion, or misuse of market power.

The few submissions that explicitly commented on this proposed action tended to be supportive.[53] Manawa Energy emphasised the importance of clear protocols around the treatment of any commercially sensitive or confidential information that may be shared.

Criteria Effective ● Efficient ● Timely ● Durable ● Value ●

Decision Progress this action.

F. Undertake regular monitoring of progress on generation investments, and an annual update of the investment pipeline and impediments.

Submitters who commented explicitly on this option were mostly supportive of this action.[54] MEUG did not consider there is a major information gap in the market as the Infrastructure Commission and System Operator provide such information, and that new entrant investors have incentives to inform regulatory authorities of any impediments they encounter.

The Authority considers it is important it understands the pipeline of, and any barriers to, investment in new renewable generation, given the latter's role in the transition, and in promoting competition in the transition, to a renewables-based electricity system. In doing its monitoring and updates the Authority can draw on information published by others.

Criteria Effective ○ Efficient ● Timely ● Durable ● Value ○

Decision Progress this action, subject to resourcing, as it has potential to support competition in the wholesale market by addressing any identified impediments to the efficient entry of new renewable generation.

G. Regularly collect information on offtake and 'firming' agreements (and if feasible declined requests) to understand and build the evidence base about the nature and scale of current and emerging access issues reported by developers of new generation.

MDAG is consulting on related options including developing an access code, and an Authority-facilitated industry-led working group is currently looking at improvements to how this market operates (see paras 2.54-2.55).

Submissions that commented on this proposed action were generally supportive[55], though Meridian was not sure there was an issue for regulators to address and was concerned the increasing information disclosure burden could become a barrier to entry. MEUG (p9) did not support this action, seeing it as 'unnecessarily intrusive' and lacking evidence of a market failure.

As access has been noted by some independent generators and retailers as an actual or emerging issue, a first step is to gather evidence to support the monitoring of this market and to help define problems and develop any options.

Criteria Effective ○ Efficient ● Timely ● Durable ● Value ●

Decision Progress this action as resources permit, as a well-functioning contracts market promotes wholesale market competition and supports the efficient entry of new renewable generation.

H. Improve the Electricity Hedge Disclosure System to improve its functionality and make contract details more transparent.

Comments

Information promotes competition and supports the efficient operation of the electricity market. Information on different types of contracts is valuable given accelerated investment, but the platform is currently very limited. A similar option is also canvassed in MDAG's options paper.

Only some submissions commented explicitly on this option, supporting improvements to the functionality of the current system.

Criteria Effective ◉ Efficient ● Timely ◉ Durable ● Value ◉

Decision Progress this action as resources permit, as part of business-as-usual ongoing improvements to systems.

I. Investigate and test the case for providing or requiring longer-dated futures (for instance products traded on the ASX).

Some of the submissions that explicitly commented on this action supported further work, including on firming products. The New Zealand Wind Energy Association submitted significant hedge market development is required. Neil Walbran submitted that increasing depth of the market for firming products could be beneficial. MDAG is consulting on options for new products.

Nova did not support market-making for longer-dated ASX futures contracts, though did support developing firming type products, peak hedges and other shaped type products. Meridian supported further investigation but thought the cost of market-making for additional products could be significant compared to the benefits.

The Authority notes that, through commercial market-making, there is a mechanism by which participants can express their willingness-to-pay for different products, including with different terms.

Criteria Effective ◉ Efficient ● Timely ◉ Durable ● Value ○

Decision Progress this action as resources permit, as access to longer-dated contracts may better support the entry of new renewable generation (noting the OTC market allows for customised products).

J. Analyse thermal generation transition risks in the context of demand to 2030, its role in hydro firming and more prevalent solar and wind generation, and options to mitigate transition risks.

Comments

This action would promote competition, reliability, and efficient operation of the electricity industry. Several submissions made a general point about the role of gas and gas-peakers in the transition. The submissions that commented explicitly on this proposed action supported it (eg Energy Resources Aotearoa, Manawa Energy, Meridian).

Criteria Effective ● Efficient ● Timely ● Durable ● Value ●

Decision Progress. Analytical work is underway.

Actions that are for other government entities to progress

To constrain the exercise of market power, the Authority invites:

K. MBIE to progress work to improve disclosure of information on availability of gas for electricity supply to support efficient price discovery and resource allocation, dry year risk management, and trading conduct monitoring, with input from the Authority and the Gas Industry Company. ~~in particular an amendment to the Electricity Industry Act 2010 so that section 46 powers include parties in industries critical to security of electricity supply, and in particular the gas industry~~

Filling the information gap on gas availability would support efficient price discovery and resource allocation, dry year risk management, and trading conduct monitoring.

See paras 2.72-2.76 for a discussion of submissions on this proposal. The proposed action has been amended (as marked up) to reflect the feedback.

To facilitate investment in new renewable generation, the Authority invites:
L. MBIE to bring forward the completion of the Gas Transition Plan, Energy Strategy, and NZ Battery project, as reduced uncertainty would contribute to more renewable generation investment, and so lower prices, sooner. Submissions generally agreed that uncertainty was an issue. For example, Manawa Energy (p7) “strongly supports any steps that the Government and independent regulators can take to reduce regulatory uncertainty.” There was also apprehension about unduly rushing these plans and projects. The BusinessNZ Energy Council does not think it is desirable to rush the completion of the Gas Transition Plan as it should be ‘done right, not fast’ (p7). But it does agree it is crucial to provide clarity how the NZ Battery Project would integrate into the wholesale electricity market (p12). Energy Resources Aotearoa and MEUG do not support accelerating such processes as it could undermine the quality and acceptability of decisions. MBIE conveyed to the Authority that these trade-offs are for Ministers to decide on. Policy uncertainty is currently a key impediment to speeding up investment in renewable generation, and the Authority encourages any steps that can be taken to reduce or remove policy uncertainty.

M. MBIE to produce an *Annual Electricity Generation Investment Opportunities* report, targeting international developers, with input from NZ Trade & Enterprise, Transpower, the Electricity Authority, Overseas Investment Office, and Ministry for Environment
This action is to support New Zealand in competing with the rest of the world for investment in renewable generation. There was some support for exploring such a report (BusinessNZ Energy Council, Manawa Energy, Transpower) and Nova thought the role appropriately sat with MBIE, independent of Transpower and market participants. MEUG and Energy resources Aotearoa did not think there was a market failure to address. MBIE has indicated it sees merit in this proposal, given its existing role in preparing regular electricity demand and generation scenarios.

N. MBIE to investigate the merit of a providing a one-stop shop for overseas investors in renewable electricity generation, to help navigate and streamline the regulatory requirements and agencies, and advice on relevant stakeholders they should engage with
Several submissions supported exploring this proposal further, though ERANZ and Manawa Energy for example suggested such a service should not be limited to overseas investors only. A couple of submissions questioned the value, including MEUG who did not think there was a market failure, and that it could be left to the market to advise investors. MBIE noted NZTE’s existing investment attraction and support programme, but that it would be happy to work with others “to explore whether or how more useful guidance could be offered.”

~~**O.** the Overseas Investment Office to publish, before the end of 2022, guidance for overseas investors in renewable electricity generation, and consider providing a helpdesk to support developers to navigate the Act’s requirements~~
Submissions that commented explicitly on this proposal generally supported it (including, for example, Business, Energy Council, Elemental Group, ERANZ, Manawa Energy). MEUG thought it should be left to the market to advice investors. The Overseas Investment Office has updated its web-based guidance and enquiries functionality, so the action is complete. ERANZ supported exploring a class exemption for investment in renewable energy projects, and the BusinessNZ Energy Council suggested amending the Overseas Investment Act so that an investment can proceed *unless it is contrary to* national interest (rather than a discretion to disallow transactions unless they are in NZ's national interest) and increasing the $100m threshold amount that the Act applies to.

P. MBIE and the Ministry for Environment to <u>promptly complete</u> ~~bring forward~~ their work to strengthen national direction for renewable electricity to inform local planning and resource management consenting. This should reflect the government’s 100% renewable electricity aspiration, electrification and renewable energy goals, and the implications for the amount of investment in renewable generation that needs to occur.
MBIE and the Ministry for Environment have prepared a consultation paper which was released on 20 April 2023. The ability for renewable generation projects to obtain consents (or reconsents) relatively promptly and without unnecessary constraints is likely to be key to enabling more generation investment faster in the transition.

Several submissions expressed support for strengthening national direction for renewable generation (with Contact Energy emphasising this should also apply to hydro storage). Wider issues with resource management reforms were raised as problematic. For example, mandatory environmental bottom lines could, as currently proposed, create more stringent barriers to investment in renewable generation, and potentially uneven treatment of distribution network connected generation compared to grid connected generation.[56]

~~Q.~~ ~~MBIE and the Ministry for Environment to investigate the evidence for, and the merits and feasibility of, applying pro-competitive conditions on consents for renewable generation (eg, use-it-or-lose it).~~
Submissions noted the risk of unintended consequences. The Authority understands the relative merits of conditions on consents is already under consideration in the context of the resource management reform work underway, with officials aware of the trade-offs. The action is therefore complete.

R. Transpower to publish ~~connection enquiries and~~ connection studies to further streamline the application process ~~and to streamline the application processes~~.
The Authority acknowledges the new Connection Enquiry Dashboard which tracks the pipeline of enquiries by location, enquiry stage, etc.[57] with other tools as part of its new Connections Management Framework. This addresses part of the action that was proposed in the Issues Paper. Submissions commenting on actions generally agreed with this proposed action. The BusinessNZ Energy Council supports the publication of connection studies to reduce potential duplication. Transpower notes "customer-funded connections studies contain commercially sensitive information about generation projects and we sign non-disclosure agreements with the enquiring party. An alternative approach could be for the Authority to use its Code amendment powers to compel these specific outcomes that the Authority has concluded may help promote competition." (p3) The Authority considers Transpower could investigate further how it could publish aspects of connection studies without releasing commercially sensitive information.

8. Next steps

8.1. This Decision Paper brings the formal review of wholesale market competition issues that commenced in 2021 to a close, and the Authority now moves to implementing actions it has identified to promote wholesale market competition in the transition toward a renewables-based electricity system.

8.2. These actions will form part of the Authority's transition work plan, alongside actions that will result from MDAG's work on supporting price discovery in a renewables-based electricity system, and other work streams (such as on future security and resilience and on regulatory settings for distribution networks).

8.3. More generally, given the Authority's statutory objective and role, the Authority will (re)consider further options to strengthen wholesale market competition in case new information arises on the exercise of market power or impediments to competitive entry, as part of its monitoring or in the context of Authority activities and investigations in other contexts. This includes considering any alleged Code breaches that are brought to the Authority's attention and/or referring appropriate matters to the Commerce Commission.

Appendix A Submissions

Submitters	Attachments
Bryan Leyland	Article: Do we need a new electricity market?
BusinessNZ Energy Council	
Consumer Advocacy Council	NZIER report, Open letter from 15 parties on the ASX clearer issue
Contact	
Electra	
Elemental Group	
Energy Resources Aotearoa	
Entrust	
EPOC	
ERANZ	
Firstgas Group	
Fortescue Future Industries	
Genesis	
Greymouth Gas	
Haast & Independent Retailers	
Ian Gunn, Sustainable Wairarapa	
Major Gas Users Group	
Manawa Energy	
Mercury	
Meridian	Axiom Letter
Methanex	
MEUG	NZIER report on questions 1 2 4 & 5
Neil Walbran	
New Zealand Wind Energy Assoc.	
Nova energy	
NZ Steel	
Octopus energy	
OMV	
Transpower	
Vern Brasell, Sustainable Wairarapa	
Wellington Electricity	
Winstone Pulp International	

The Authority followed up on one further email that was received on time but where the sender had omitted to attach their submission. No response had been received by the time that this document was finalised.

Appendix B Endnotes

1 All written submissions have been reviewed and considered by the Authority in reaching the decisions set out in this paper. This Decision Paper contains a generally thematic discussion of the submissions received, reflecting key issues raised and including examples of the types of submissions received. This necessarily compresses references to submissions and the information included in submissions. Readers should refer to individual submissions to obtain a full account of submitters' views.

2 See https://public.tableau.com/app/profile/electricity.authority/viz/ITPbenchmarks/ITPbenchmarks

3 The Authority's statutory objective was amended with effect from 31 December 2022 and now consists of a main and additional statutory objective. The additional statutory objective is to protect the interest of domestic consumers and small business consumers in relation to the supply of electricity to those consumers. It applies only to the Authority's activities in relation to the dealings of industry participants with domestic and small business consumers which is less relevant to the issues covered in this paper.

4 https://www.electricitycontract.co.nz/

5 The Issues Paper is available at https://www.ea.govt.nz/projects/all/review-of-wholesale-market-competition/consultation/promoting-competition-in-the-wholesale-electricity-market-in-the-100-renewable-electricity-transition/

The response to submissions on the 2021 Market Monitoring Review is available at: https://www.ea.govt.nz/documents/2213/response-to-submissions-review-of-structure-conduct-and-performance.pdf

The Investment Survey is available at https://www.ea.govt.nz/documents/2156/Information-paper-Generation-Investment-Survey-2022-Concept-Consulting-.pdf

The PIR of trading conduct provisions is available at https://www.ea.govt.nz/documents/2157/Information-paper-Post-implementation-review-of-the-trading-conduct-provisions.pdf

6 Submissions on the Issues Paper are available at the above link.

7 These included BusinessNZ Energy Council, Contact Energy, Elemental Group, Energy Resources Aotearoa, ERANZ, EPOC, Fortescue Future Industries, Genesis, Manawa Energy, Mercury, Meridian, Neil Walbran, NZ Wind Energy Association, Nova Energy, Transpower, and Wellington Electricity.

8 Meridian also submitted that "the Authority seems to have misunderstood (or misrepresented) Axiom's analysis" about distinguishing between price rises stemming from genuine scarcity or from contrived shortages (p44). It expressed concern the Authority "seems to imply Axiom raised questions about generators artificially inflating prices when in fact it did nothing of the sort" (p45), noting Axiom's report found it is 'entirely appropriate for hydro generators to reflect tightening gas market conditions in their offer prices', and presented 'a *purely theoretical* discussion' only of strategic witholding to raise prices, without expressing an opinion on whether hydro generators had done so.

The Authority did not misunderstand Axiom's analysis and regrets the drafting of paragraphs 2.2 and 2.12 of the Issues Paper if it suggested otherwise. The Authority agrees with the points about reflecting tightening gas market conditions in offer prices and that the exposition of strategic witholding was theoretical.

9 These included Bryan Leyland, Consumer Advocacy Council, Electra, Entrust, Haast & Independent Retailers, Major Electricity Users Group, NZ Steel, Octopus Energy, and Winstone Pulp International.

10 Firstgas Group, Greymouth Gas, Major Gas Users Group, Methanex, OMV.

11 For example, EPOC, Neil Walbran, New Zealand Wind Energy Association, Nova, Octopus Energy, Transpower.

12 Contact Energy comments that the Issues Paper overstates Contact's stored hydro capacity (and that of Mercury), so that it is incorrect to claim Contact could exert any market dominance (p 13). The Authority notes that Table 2 in its Issues Paper does not show stored hydro capacity in GWh, as quoted by Contact in this submission, but generation capacity in MW. The notes to the table also explain the definition is hydro units downstream from stored capacity, including downstream from Hawea.

13 For example, ERANZ, Mercury, and Meridian.

14 NZIER for MEUG writes on p2 that "If wind or solar generation can replace thermal generation, the propositions in the Issues Paper that investment in renewables generation will increase competition among generators … seems reasonable. However, to the extent that [they cannot] … the propositions in the Issues Paper about increased competition are unlikely to hold." The Authority considers the Issues Paper clearly identifies the reduction of competition at certain times as a risk in the transition, with the paper focused on potential actions to mitigate this risk.

15 For example, BusinessNZ Energy Council, ERANZ, Genesis, Meridian, New Zealand Wind Energy Association, Winstone Pulp International.

16 For example, EPOC, ERANZ, Genesis, Meridian, Neil Walbran, New Zealand Wind Energy Association, Nova. NZ Steel also agreed that this chapter of the Issues Paper set out the issues and challenges well.

17 Electra, Consumer Advisory Council, Octopus Energy. MEUG submitted (p2) that the proposition "unnecessarily assumes the cause of market power has been anticompetitive behaviour to impede new generation entry", which served to detract from the role that vertical integration plays. The Authority notes it considered whether entry was being impeded as just one of the different ways by which generators with market power could exercise market power (and concluded the investment pipeline evidence did not support that proposition). The *Market Monitoring Review* investigated the potential exercise of market power in the wholesale electricity market in the round, using the Structure, Conduct, Performance framework, within which barriers to entry is one indication of the exercise of market power.

18 For example, see BusinessNZ Energy Council, Contact Energy, EPOC, Energy Resources Aotearoa, ERANZ, Genesis, Manawa Energy, Mercury, Meridian, Neil Walbran, New Zealand Wind Energy Association, Nova. Nova considers that, given the investment impediments and the scale of investment needed, the threat of entry is less of a constraint on market power than it ought to be, and the key challenge is to facilitate peaking capacity and demand response.

19 For example, see Consumer Advisory Council, Electra, Entrust, Haast & Independent Retailers, MEUG, NZ Steel, Octopus Energy and Winstone Pulp International.

20 Entrust, p1. Also see, for example, Consumer Advisory Council, Electra, Haast & Independent Retailers, NZ Steel, Octopus Energy, and Winstone Pulp International.

21 Haast & Independent Retailers consider the "post-implementation review (PIR) of the new trading conduct rules was conducted in too brief a period (less than a year) to be useful", and that the PIR "simply highlights the Authority has not identified short-term or transitory abuses of market power. This does not change the clear evidence of substantial and sustained exercise of market power and elevated prices." (p4).

The Authority disagrees with this assessment. The PIR covered a period of 13 months, which is more than a year. The Authority considers this period is sufficient to draw conclusions. Further, the Authority's ongoing monitoring of trading conduct since then has not caused it to change its view on the effectiveness of the rules.

The Authority is not aware of what 'clear evidence of substantial and sustained exercise of market power' the submission is referring to. The Authority was clear in its *Market Monitoring Review* that it was not able to be definitive, concluding only that there was *some* evidence generators *may* have been exercising market power (emphasis added). The unexplained $38/MWh found in the regression analysis of the drivers of the increase in spot prices is not “evidence of unexplained *over-pricing*” (emphasis added) as Haast & Independent Retailers state on p.4 of their submission.

Having said that, the Authority will consider any alleged Code breaches that are brought to its attention and/or refer appropriate matters to the Commerce Commission.

22 Haast & Independent Retailers, at footnote 7, state “the Authority has not referenced or substantiated its claim that: "The literature indicates it is unclear if going from a small number of competitors to a somewhat larger, but still small, number would improve competition. It might, but it might not." This is certainly not our experience based, for example, on entry of 2degrees in the cellular market."

The Authority acknowledges that it did not provide references for its observations about the uncertain impact of going from a small number of firms (that currently make up the lion share of the generation market) to a somewhat larger but still small number. However, the Authority still stands by its observations. These are based on considerations of practicalities (such as limits to the efficient divisibility of relevant water systems, eg Issues Paper para 6.48) and what the Authority understands to be relatively uncontroversial economic principles.

Specifically, the economic literature explains that a small number of large firms in a market could reflect either the outcome of competition or a lack of competition (which can - but not necessarily does - result in poor outcomes for consumers). See, for example, Harold Demsetz. 1973. “Industry Structure, Market Rivalry, and Public Policy”. *The Journal of Law & Economics*, Vol. 16, No. 1.

Outcomes ultimately depend on firms’ behaviours and strategies. This makes the outcome of specific structural reform options uncertain and dependent on specific context. This in turn suggests predictions of outcomes in specific contexts require detailed testing of specific structural reform proposals, which the Authority considered to be inappropriate and premature (para 6.47 of the Issues Paper). The threat of entry or expansion by competing firms or more responsive demand will help discipline incumbents’ behaviours and strategies – hence the Issues Paper’s focus on such approaches.

For formal analysis, see for example Fama & Laffer. 1972. “The number of firms and competition”. *The American Economic Review*, Vol 62, No.4. This finds no clear-cut relationship between the number of firms and the degree of competition; just two firms can produce perfect competition if certain conditions hold.

For another example, see Selten R. 1973. *A simple model of imperfect competition, where 4 are few and 6 are many*, Institute of Mathematical Economics, Universitat Bielefeld. Firms have a choice about which strategy to adopt, and the number of firms in a market that makes collusion more profitable, and thus more likely, than competition depends strongly on assumptions.

23 For example, see Consumer Advisory Council, Electra, Haas & Independent Retailers, MEUG (and NZ Steel and Winstone Pulp International), and Octopus Energy.

24 https://public.tableau.com/app/profile/electricity.authority/viz/ITPbenchmarks/ITPbenchmarks

25 See also para 2.17-2.20 in https://www.ea.govt.nz/documents/2591/Internal-transfer-prices-and-segmented-profitability-reporting-updated-20-April.pdf

26 See https://www.ea.govt.nz/documents/1278/Open_letter_-Notice_of_information_request_and_request_for_feedback_on_proposed_scope.pdf and https://www.ea.govt.nz/documents/1276/Open-Letter-Stage-1-October-20221378506-v3.2.pdf

27 https://www.ea.govt.nz/documents/1260/Open-Letter-Stage-2-December-20221381881.2.pdf

28 See for example MEUG, NZ Steel, Winstone Pulp International. NZIER for the Consumer Advisory Council claims “it is probable that consumers…are ultimately subsidising the excessive dividends beyond what is fair that generators pay to its shareholders” (p19) rather than investing in new renewable generation (p23).

[29] See https://comcom.govt.nz/__data/assets/pdf_file/0024/278403/Market-Study-into-the-retail-grocery-sector-Final-report-8-March-2022.pdf, para 3.15

[30] See p49 of the Commission's report referenced in the previous note.

[31] In an energy-only market, generators are paid only for electricity they generate, and only earn contributions to their fixed costs when the market-clearing price for electricity is higher than their variable cost of generation. Marginal pricing is where all firms get the market-clearing price, which is set by the most expensive generator needed to serve demand.

[32] See for example Consumer Advocacy Council, Genesis, Bryan Leyland, NZ Steel, Winstone Pulp International. Genesis on p5 is concerned that dry year risk support is not discussed and that the "current market model does not provide the required price signals and incentives to keep thermal generation available to provide security of supply." The Authority notes the risk of premature exit of thermal back-up generation was considered in the Issues Paper and informed its proposed action on thermal generation transition risks. The Authority's work on Winter 2023 canvasses relevant options, including some similar to the transitional options Genesis proposed.

[33] For example, see BusinessNZ Energy Council, EPOC, ERANZ, Fortescue Future Industries, Mercury, Neil Walbran, New Zealand Wind Energy Association, Octopus Energy.

[34] See Biggar D R, And M R Hesamzahed. 2014. *The Economics of Electricity Markets.* IEEE Press John Wiley & Sons

[35] For example, under competitive conditions, under marginal pricing the optimal strategy for a generator tends to be to offer their generation at marginal cost (knowing they will receive the market clearing price if they are dispatched). Under a pay-as-bid (or pay-as-offered) approach, incentives on generators are to offer above marginal cost and as close to the most expensive offer they expect will be dispatched.

[36] NZIER for MEUG argues that in the Issues Paper the Authority has overstated the role of carbon costs in encouraging the transition and simplified the drivers of wholesale electricity prices. NZIER refers to the Authority's earlier regression analysis as showing that most of the increase in wholesale prices was explained by a dummy variable linked to the time of the Pohokura outage. The Authority disagrees it overstated the role of carbon costs: the relevant section in the Issues Paper was not about drivers of changes in prices, but about carbon pricing driving a wedge between the cost of renewables and fossil-fuelled generation, promoting investment in renewable generation and electrification.

[37] MEUG (p5) is concerned the Authority's estimates of gross windfall gains may be misleading. The Authority is satisfied that the Issues Paper clearly identifies the Authority's estimate is illustrative of the potential order of magnitude and a top-end estimate. The estimates are based on the opportunity cost of carbon and fuel, as NZIER for MEUG alludes to on page 7.

[38] The BusinessNZ Energy Council and MEUG have asked for more detail on the calculations of windfall gains from carbon pricing in the Issues Paper. The Authority has released the programming code with this Decision Paper.

[39] BusinessNZ Energy Council and Wellington Electricity, Energy Resources Aotearoa, Firstgas, Genesis, Greymouth Gas, Major Gas Users Group, MEUG and Winstone Pulp, Methanex, Nova, OMV. ERANZ's members could not come to a consensus on this proposal.

[40] Meridian notes that it had assumed that the introduction of the quarterly reporting regime had resulted in generators with thermal fuel information disclosing their thermal fuel supply and constraints, but that it now understands this may not be the case (p30). The Authority notes that major participants who received gas have disclosed what they are obligated to and have referred the Authority to their gas supplier for thermal fuel information. These suppliers are not covered by the major participants definition, and as such the Authority cannot oblige them to disclose gas information.

[41] Firstgas notes "it is incorrect to claim that uncertainty raises the electricity risk curves published by the electricity System Operator. The EA requires the System Operator to assume full availability of fuels and assets (in the absence of information to the contrary)." Firstgas's point is generally correct,

although the Authority had in mind situations when there are constraints on gas availability (such as when there were unplanned outages at major gas fields), and uncertainty about whether and when gas may be available for generation at times of electricity sector scarcity. The System Operator then de-rates gas generation availability, which raises the electricity risk curves.

42 See, for example, ERANZ, Meridian, Mercury, Neil Walbran, New Zealand Wind Energy Association, Nova, Octopus Energy, and Transpower.

NZ Steel considered the criteria should reflect that solutions for the long-term benefit of consumers would not be acceptable if undue 'suffering' is inflicted on today's consumers. (p2 and p4). The *Interpretation of the Authority's statutory objective* sets out how the Authority interprets benefits to consumers, namely as relating to the net effects on consumers in aggregate, and with a focus on dynamic efficiency (paras A.5-A.12). In terms of the criteria, the Authority considers that the durability criterion would cover assessment of any 'undue' effects.

The Consumer Advisory Council recommended that the Authority ensure equity and fairness for small consumers be applied to its interpretation of its expanded objectives, and that it uses additional metrics other than economic in assessing appropriate regulatory settings (p1).

The Authority must assess its settings and options in terms of the Authority's statutory objectives. See endnote 3 for further comment on the Authority's additional objective.

43 See the *Energy Transition Roadmap,* summarised on the cover page of this paper.

44 For example, BusinessNZ Energy Council, Contact Energy, Fortescue Future Industries, Manawa Energy, Mercury, Meridian, Neil Walbran, New Zealand Wind Energy Association, Nova, Wellington Electricity.

45 This includes improving access to consumption data. "The Council has commissioned research on electricity bills and what can be done to improve them so that consumers have good information on power usage and costs." (p5)

46 https://www.ea.govt.nz/projects/all/updating-regulatory-settings-for-distribution-networks/

47 Contact Energy draws on its experience as owner of Simply Energy, 'one of the largest providers of demand flexibility in New Zealand' (p5).

48 The expected payment (if a consumer is asked to reduce demand when it otherwise may have used electricity) would be a share of the difference between the wholesale rate and the consumer's fixed contract rate.

49 Generators use resources and incur costs to produce a megawatt. When consumers do not use a megawatt, it means resources are not used, and consumers hold on to their money.

50 See Mr Walbran's submission for more detail on the option and potential implications including for making allowances in distributors' price paths.

51 For example, see BusinessNZ Energy Council, Contact Energy, Fortescue Future Industries, Manawa Energy, Mercury, Meridian, Neil Walbran, New Zealand Wind Energy Association, Nova, Wellington Electricity.

52 The Authority's Post Implementation Review of Wholesale Information Disclosure Obligations was published on its website earlier in May 2023.

53 For example, see BusinessNZ Energy Council, Energy Resources Aotearoa, Manawa Energy, Meridian.

54 For example, see BusinessNZ Energy Council, Manawa Energy, Meridian.

55 For example, see Energy Resources Aotearoa (if voluntary), Manawa Energy, Meridian, Transpower.

[56] For example, see BusinessNZ Energy Council, Contact Energy, ERANZ, Manawa Energy, Meridian, New Zealand Wind Energy Association. Manawa Energy has highlighted that, in the transition from the RMA to the proposed new legislation, water permit reconsents will have a shortened term which will not apply to grid connected generation. The Authority agrees that, on the face of it, this treats generation differently depending on their point of connection, which would be inefficient, and could be a barrier to investment in distributed hydro schemes.

[57] https://www.transpower.co.nz/connect-grid/connection-enquiry-information