20 October 2022

Mr Sam Fleming
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Dear Mr Fleming

Last December you asked me to review the Electricity Authority's ('Authority's) Information Paper[1], containing the preliminary findings of its review of the wholesale market. My report[2] examined whether the various analyses of wholesale prices presented in that document provided any reliable indications of the existence and exercise of substantial market power. I concluded that those 'short-term' assessments supplied no such evidence and, furthermore, that they were *incapable* of providing any meaningful insights into the state of competition due to their intrinsic limitations.

The Authority has referenced my report on a handful of occasions throughout its latest bundle of consultation materials. I understand that Meridian is troubled by two of those references. It fears that readers, upon perusing those extracts, might draw false conclusions about what I had said in my report and the conclusions that I reached. Having now had the opportunity to review the passages in question myself, I share those concerns. The purpose of this letter is to remove any ambiguity surrounding what my report stated and my opinions on particular matters.

1. Report's key findings

To see why certain references to my report have the potential to mislead – however unintentionally – it is helpful first to recap what it actually said (and what it did not say). In brief, the report made the following points – most of which are thoroughly uncontroversial as a matter of economics:

- When understood properly, short run marginal cost (SRMC) includes any opportunity cost of rationing demand to match the available supply. When the potential for shortages arises in competitive markets, 'cost-reflective' prices therefore rise to manage that scarcity, reflecting that heightened SRMC.

[1] Electricity Authority, *Market Monitoring Review of Structure, Conduct and Performance in the Wholesale Electricity Market, Since the Pohokura Outage in 2018*, October 2021 (available: here; hereafter: 'Information Paper').

[2] Axiom Economics, *Economic Review of the Electricity Authority's Analysis of Spot Prices*, A report for Meridian, December 2021.

- In markets characterised by suppliers with varying costs, it is often also during times of tightening supply/demand conditions that it is most feasible – and profitable – for an 'inframarginal' producer to strategically withhold supply to create *artificial* scarcity and increase prices *above* cost-reflective levels (i.e., even accounting for the rising SRMC).
- Even in the *best of circumstances*, it can be exceedingly difficult to distinguish between the two scenarios described above – i.e., between price rises stemming from *genuine* scarcity and from *contrived* shortages. Doing so requires comprehensive information on the probabilities and opportunity costs of shortages. This is typically very difficult to obtain.
- Such comparisons are complicated to the point of near impossibility in the context of New Zealand's wholesale electricity market. The SRMC of generation is influenced by actual and projected lake levels, gas market conditions (and the potential flow-on implications for reservoir management) and myriad other factors.
- These complexities render it virtually infeasible to arrive at robust measures of SRMC against which to compare prices. Unsurprisingly, all the Authority's attempts to do so in its paper were unreliable. Its short-term 'price-cost' tests consequently did not – and *could not* – provide any meaningful insights into the state of competition, as I illustrated.
- More insights into the state of competition in the wholesale market can be obtained by asking two basic questions: have spot prices been persistently above the cost of new entry? And, if so, are they likely to remain there due to enduring barriers to entry or are they likely to 'self-correct'? Commendably, this now seems to be the Authority's focus.

Importantly, I expressed no opinion about whether generators had sought to engineer artificial shortages by withholding supply during the period in question. It would be very strange if I had. After all, the key points of my report were: 1) it is nigh on impossible to produce the robust estimates of SRMC needed to enable such an assessment; and 2) superior analytical approaches are available for examining the state of competition.

2. First reference

The first potentially troublesome passage appears at paragraph 2.2 of the Authority's response to submissions.[3] When canvassing what respondents had said about whether uncertainties in the gas market could have contributed to the observed uplift in wholesale prices, the Authority states that:

> *'Submissions from Contact, Meridian and Mercury argued that it can be fully explained by the uncertainty in gas supply caused by the 2018 Pohokura outage, the decline in Pohokura production from March 2020, and other unplanned gas outages.* ***However, submissions from Hayden Green (Axiom Economics, included as part of Meridian's submission) and Nova argued that competitors could have taken advantage of higher gas prices to raise their offer prices without being displaced by thermal generation.'*** [emphasis added]

There are several problems with the way in which my report is referenced in this passage. The sentence in which my report is cited (in bolded font) is preceded by another in which a benign explanation for the observed price rise is introduced – namely, uncertainty in gas

[3] Electricity Authority, *The Authority's response to submissions on the 2021 Market Monitoring Review of Structure, Conduct and Performance in the Wholesale Electricity Market*, October 2022 (hereafter: 'Authority's response to submissions').

supply. Contact, Meridian and Mercury are said to favour this account. The ensuing sentence then introduces an *alternative* – and potentially[4] more sinister – possibility, which is attributed to Nova and to me.

An unfortunate – and perhaps wholly unintended – consequence of this juxtaposition is that any readers unfamiliar with my report might be left with the mistaken impression that I have ruled out the *former* explanation. They could infer instead that I believe hydro generators 'took advantage of market power' by engineering artificial scarcity to increase prices. That is *not* my opinion and there was certainly no such statement – or anything remotely like it – in my report. For the avoidance of doubt:

- My report set out the crucial *practical* interdependences between gas market conditions and hydro storage levels. Namely, if gas market conditions tighten and result in less gas-fired generation, then this may increase the probability of water shortages if hydro plants are dispatched more readily and, in turn the SRMC of water.[5]
- I explained that it is entirely appropriate for hydro generators to reflect those tightening gas market conditions in their offer prices. This would not constitute a 'taking advantage' of market power for an anticompetitive purpose warranting regulatory intervention. It would instead constitute efficient, cost-reflective pricing.
- My report also contained a *purely theoretical* discussion of the circumstances in which it might be profitable for an inframarginal supplier to strategically withhold supply to produce artificial scarcity and raise prices. However, as I stressed previously, I *expressed no opinion* about whether hydro generators had done so in this context.

The conceptual discussion of strategic withholding contained in my report was intended simply to highlight the many difficulties associated with distinguishing between price rises resulting from *genuine* scarcity and *contrived* shortages. As I have explained, in a market such as this, such analyses are fraught and there are better ways to examine competitive dynamics. Indeed, the Authority itself has conceded that its short-term analyses have not revealed whether market power was misused for *precisely the reasons* I cited:[6]

> *'Our analysis assumes that SRMC is inclusive of opportunity costs and scarcity rents. We acknowledge the difficulties inherent in this analysis due to the difficulties in measuring SRMC (and the subjective nature of opportunity costs). Conditions which affect risk assessment – such as gas supply uncertainty – should be reflected in these opportunity costs. We acknowledged in the WMR that our measures of opportunity cost* ***may not perfectly take gas supply uncertainty into account****. The level of risk aversion surrounding this gas supply uncertainty is* ***also subjective****. We therefore* ***cannot be certain***

4 I say 'potentially' here, because it is not entirely clear what the Authority means by 'taken advantage of higher gas prices to raise their offer prices'. As I elaborate below, if gas market conditions tighten causing higher gas prices and this, in turn, increases the probability of *water shortages* (if hydro plants are dispatched more often), then it is unsurprising – and entirely appropriate – that hydro plants would respond by increasing their offer prices.

5 This is consistent with the explanation offered by Contact, Meridian and Mercury alluded to in the first sentence of the extract. Of course, readers unfamiliar with my report would not know that I had *also* offered precisely that explanation as well – in considerable detail. The juxtaposed explanations and loose phrasing might therefore lead some to conclude – erroneously – that I did not accept the explanation presented in the first sentence (which does not reference my report), and instead favoured the (unhelpfully unambiguous) possibility presented in the second. As I stated above, that is *not* the case. As I elaborate below, I *have no view* on which explanation is more likely.

6 Authority's response to submissions, paragraph 4.12.

if any change in relationship between SRMC and offer prices in the review period compared to previous years was a change reflecting this gas supply uncertainty*.'* [emphasis added]

In other words, the Authority has agreed with one of my core conclusions, i.e., that its short-term analyses do not provide any reliable evidence of the existence and exercise of substantial market power.[7] Regrettably, for the reasons set out above, the way in which my report is cited at paragraph 2.2 of its response risks leaving readers with a rather different impression of my findings – however inadvertently. I trust the foregoing will clear up any confusion caused by the curious juxtaposition, ambiguities and missing context.

3. Second reference

The second passage can be dealt with comparatively swiftly since it is problematic for exactly the same reasons as the first. A statement I made in one part of my report is uncomfortably juxtaposed against a point I made in another – in quite a different context – and with no reference to my crucial, overarching conclusion. Namely, at paragraph 2.12 of its response to submissions, the Authority says:

> *'Hayden Green (Axiom Economics, included as part of Meridian's submission), highlighted how the decline in output from Pohokura tightened supply and reduced flexibility in the gas market, resulting in reduced delivery of contracted amounts. Green argues that this increased the importance of gas storage, increasing the opportunity cost of gas and therefore the short run marginal cost of gas, above any increase in the price of gas. This also increased the opportunity cost for hydro generators, as they had to adjust their assumptions about thermal generators.* ***However, Green's report also highlights how these conditions are likely to encourage the exercise of market power, with generators able to signal 'contrived scarcity' by strategically withholding generation.****'* [emphasis added]

Here again, there is a risk – however trifling – that unwitting readers might read the last (bolded) sentence and be left with the impression that I consider generators exercised market power by restricting supply. At the risk of repeating myself, that is *not* my view. To reiterate, my conclusion – which is not mentioned in the passage – is that the Authority's short-term analyses are *incapable* of determining whether generators acted in this manner. As I noted earlier, the Authority has now also accepted as much.[8]

Yours sincerely

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7 Put another way, the Authority has conceded that its analyses provide no reliable basis to conclude that the uplift in prices coinciding with the increasing uncertainty surrounding gas supply reflected anything other than the perceived underlying supply/demand conditions.

8 *See:* Authority's response to submissions, paragraph 4.12.