Review of competition in the wholesale electricity market

27 October 2021

Introduction

In March 2021 the Electricity Authority announced it would conduct a review into competition in the wholesale electricity market.

The period of the review covers the sustained elevated electricity prices since an unplanned outage at the Pohokura gas facility in Spring 2018 and the announcement in January 2021 of the arrangements to extend operation of the NZAS smelter at Tiwai by 4 more years.

Today the Authority is releasing two papers for consultation;

- A detailed Review paper that sets out the methodology used for the review, as well as a set of observations about the competitiveness of the wholesale electricity market; and
- An Issues paper that picks up on an observation made in the Review paper.

Scope and role of the Authority

The Authority's focus is to protect the long-term interests of New Zealand electricity consumers.

The Authority wants to support an efficient transition to a low-emissions economy that is also affordable for consumers.

The review looked at the structure, conduct and performance of the wholesale electricity market from January 2019 until June 2021.

The papers are based on the information available to the Authority and are subject to consultation so we can gather more feedback.

Review paper

Market Monitoring Review of structure, conduct and performance in the wholesale electricity market

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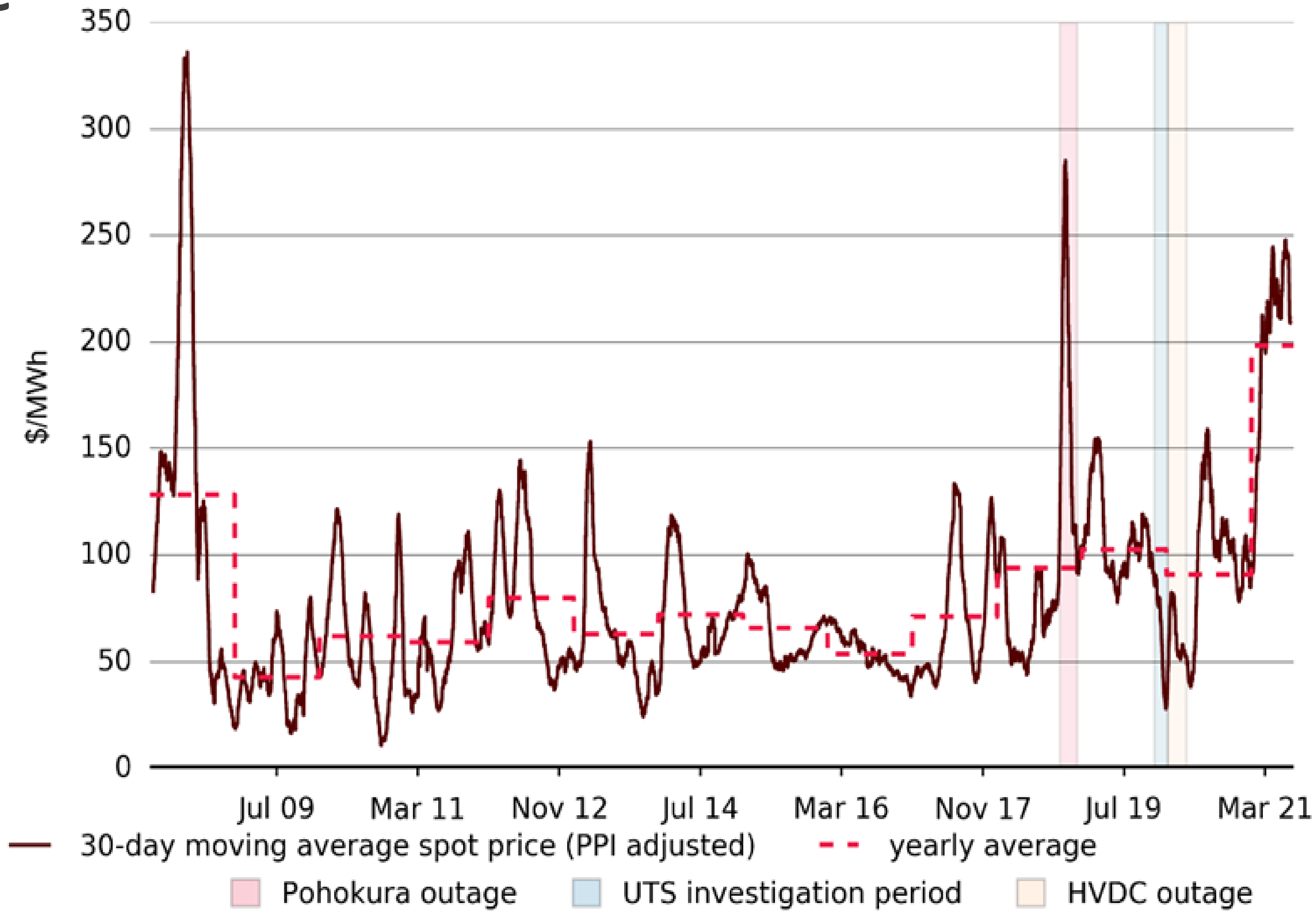
Prices have been elevated since late 2018



Sources: Electricity Authority, Stats NZ

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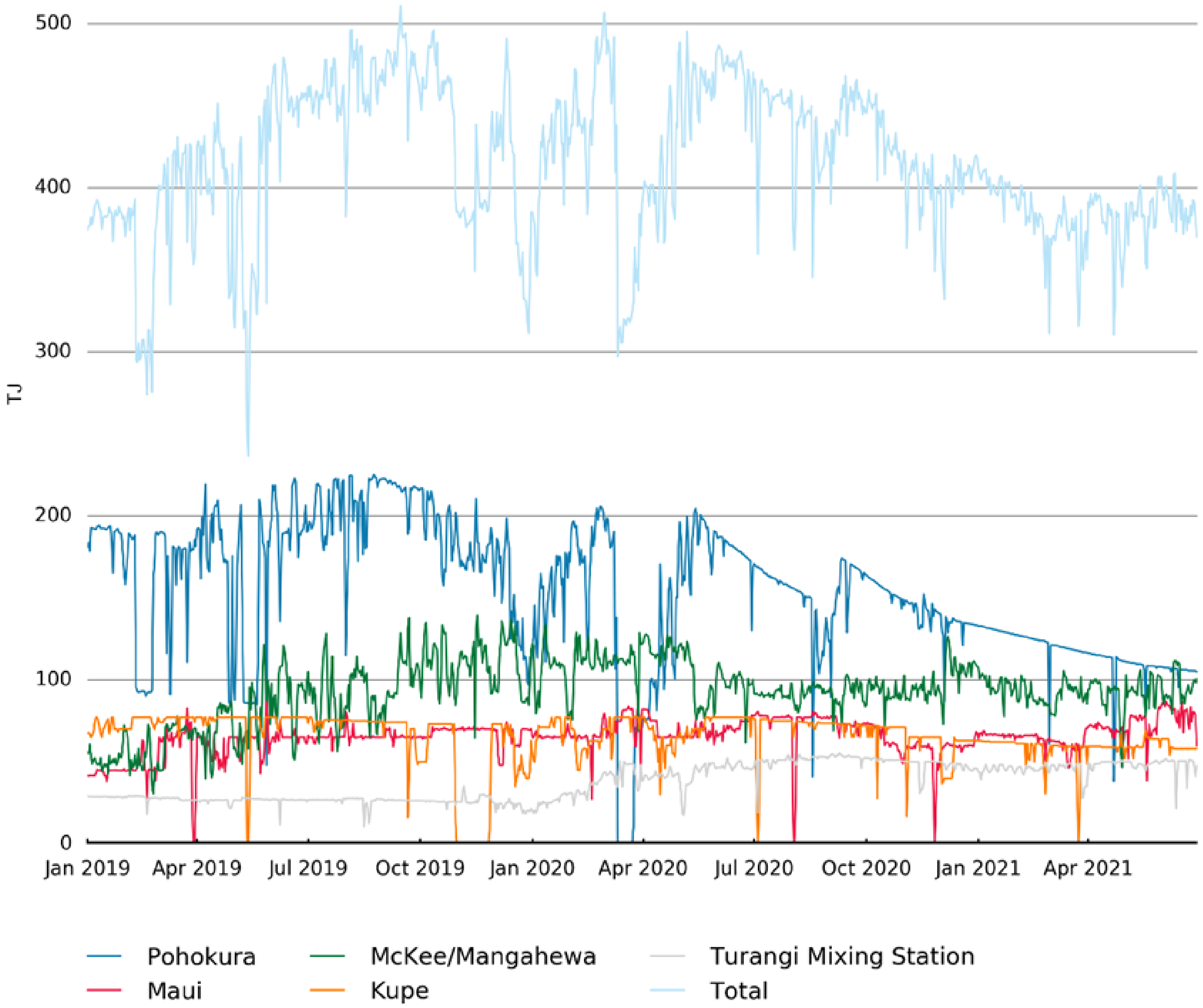
Gas supply issues have impacted electricity prices

- Declining gas availability has increased the cost of fuel for thermal generators.
- Carbon costs and coal costs have also increased.
- These increased costs have been reflected in thermal generator offers.
- Gas availability flows through to hydro offers: hydro generators have to take thermal prices into account when considering storage management.



Sources: Gas Industry Company Limited

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Observations of spot market conduct

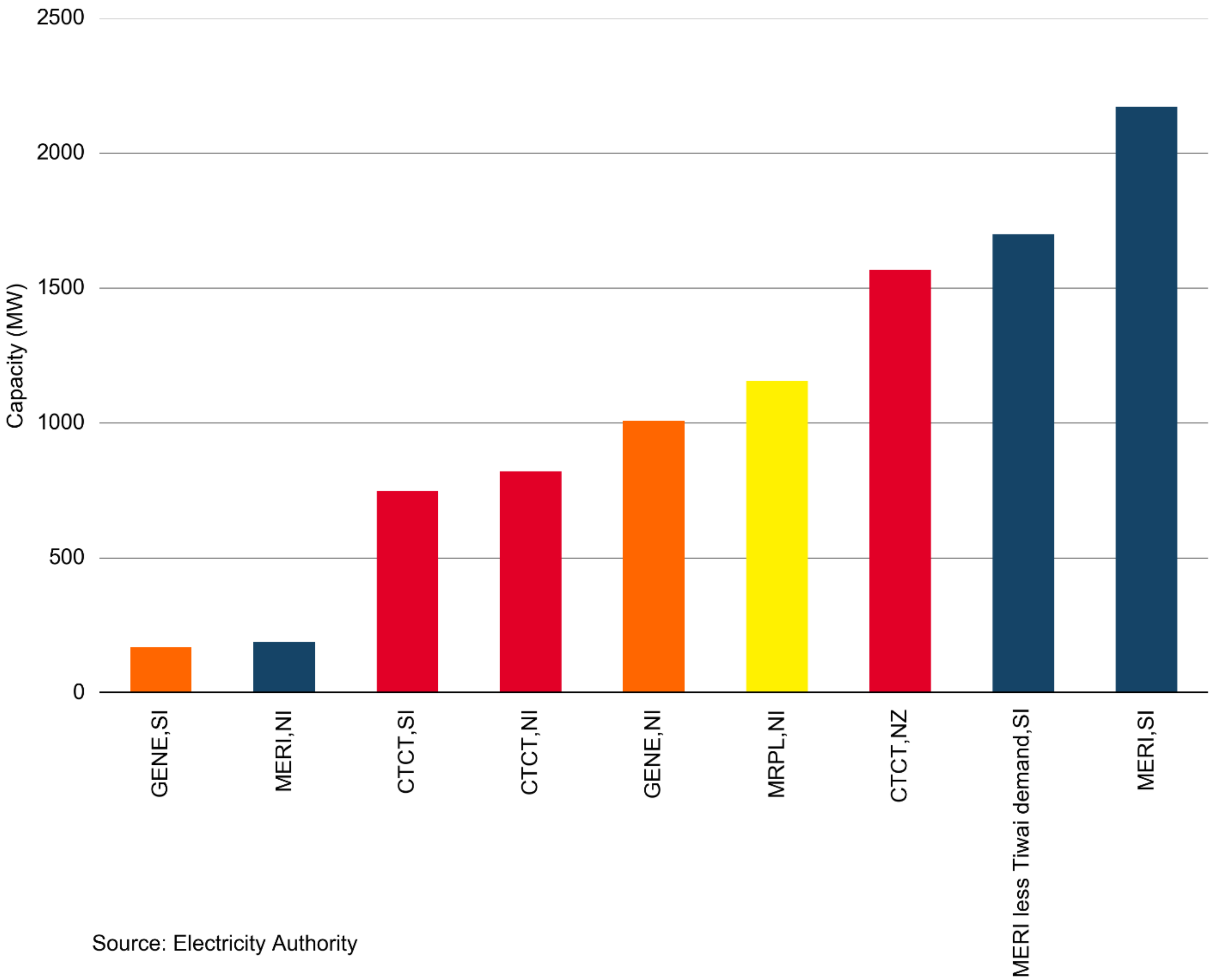
- Offer prices have increased since the Pohokura outage, and there is often a large proportion of offers above cost (including the costs associated with prudent storage management) for some generators.
- Some offers do not reflect underlying conditions.
- Our analysis suggests that some, but not all, of this can be explained by gas supply uncertainty.
- There is some evidence of an increased incentive and ability for electricity generators to structure their offers into the market in a way that keeps prices high (economic withholding).
- The Authority is seeking stakeholder feedback on these and other observations to help inform the next steps in our response.

Investment

- Investment in efficient and low carbon generation plant is needed to displace legacy plants and assist in the transition to renewables
- While there are several projects signalled, only a small number have proceeded to commissioning. Factors suggested that may have contributed to this delay include:
  - Delays in consenting
  - The need to update consents for new technologies (eg, wind turbines)
  - The need for transmission connections
  - Uncertainties in the investment environment
- Respondents to interviews with Concept suggested that some of the uncertainties are falling away (Tiwai) and that the market for PPAs (power purchase agreements) may be improving, which will improve the investment environment for independent generators.

The market is dominated by a few large players

Meridian's South Island generation makes up 30% of all NZ generation capacity



Source: Electricity Authority

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Tiwai I

The Authority monitors the impact of the smelter's electricity use on the wholesale market. We began to have concerns about the knock-on effect for other consumers once we became aware of the new contract price.

The financial agreement between NZAS and Meridian (supported by Contact) results in a low electricity price for the smelter (between $30/MWh and $40/MWh).

The smelter staying results in greater demand, more thermal generation and higher prices for other consumers.

The higher revenues generators earned from other consumers more than offset any subsidy paid to the smelter ($500M over the term of the contract).

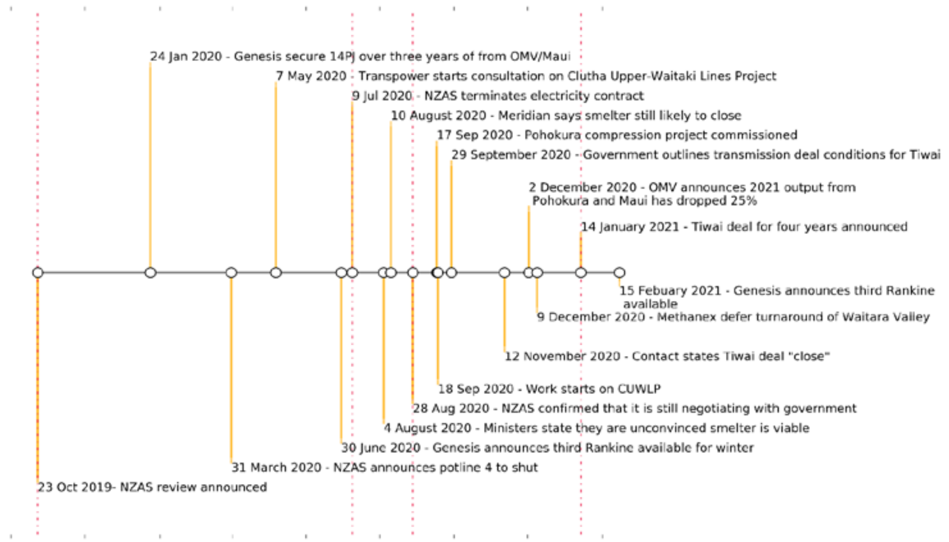
Tiwai II

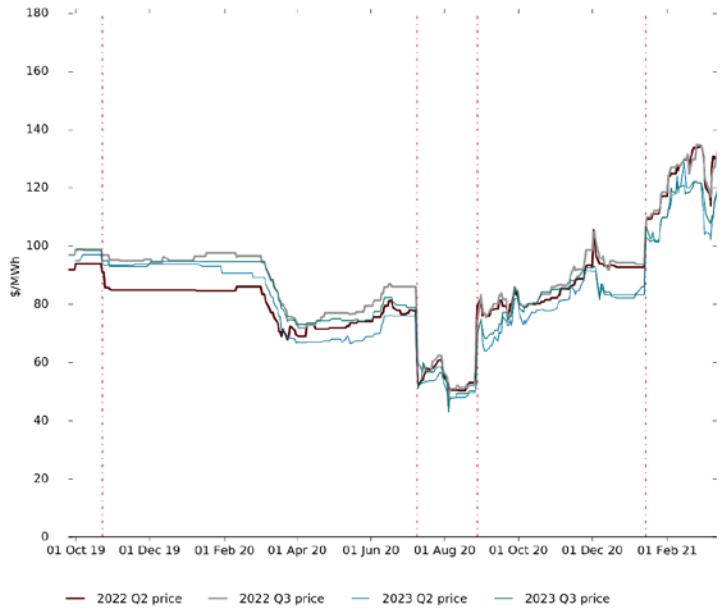
All generators benefit from the increased electricity demand and higher wholesale prices from the smelter staying open.

This picture shows the timeline of announcements around Tiwai and other major events over the review period.

Forward prices increased by $13-22 / MWh in response to news Tiwai might and then did stay, suggesting higher spot market revenues of between $1.6bn and $2.6bn over three years from the NZAS decision.

These price movements were just related to NZAS's decision to stay or go – not about the price it was paying or whether that price was efficient.





What does this mean?

The low price paid could indicate NZAS is being subsidised $500M over the contract term.

And households could be paying $100 - 200 more per year for their electricity.

Issues and options paper

Inefficient price discrimination in the wholesale electricity market

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What is inefficient price discrimination

- Price discrimination is where different consumers pay different prices for the same product (price discrimination is not always inefficient).
- Price discrimination is inefficient when:
  - Consumers with low valued use of electricity consume too much and consumers who value it more consume too little;
  - The benefits of consuming electricity are less than the cost of producing it;
  - The resulting market prices can send distorted signals about electrification and the need to invest in new generation.
- The Authority is addressing the risk of inefficient price discrimination to protect the long-term interests of consumers.

Tiwai contracts highlight potential for inefficient price discrimination

- The price discrimination in the Tiwai contracts raises the possibility that electricity may not have been allocated efficiently.
- The efficiency costs arising from Tiwai contracts are potentially large ($57-117M per year), motivated by a wealth transfer from consumers to generators ($1.6B to $2.5B).
- Note: The Authority has not determined that the Tiwai contracts are inefficient:
  - All parties to the agreement appear to have acted rationally given their respective commercial incentives.
  - The Authority's analysis of the Tiwai contracts is not part of any current compliance investigation.
  - It does not appear that the Authority would be able to unwind the existing Tiwai contracts even if they were definitively found to be inefficient.
- The Authority is consulting on a market design to provide greater assurance that inefficient price discrimination will not occur, both with respect to any future Tiwai contracts and in other contexts.

Evidence the arrangements could have been inefficient

- At the time offers were made to NZAS, the contract price per MWh was significantly below forward prices for the term of the contract.
- The benefit of NZAS consuming electricity may have been less than the cost of producing it (potential subsidy of $500M over the contract’s term)
- The effect of NZAS staying on wholesale electricity prices encourages generators to agree uneconomic terms to ensure NZAS continues to operate
- All generators benefit from the higher spot prices for their generation. Generators have an incentive to agree to a discounted price for the electricity supplied to NZAS if the additional revenue from other consumers exceeds any loss from the discount.
- The negotiation was undertaken off-market - other users, who might have valued it more highly, did not get the opportunity to bid for the electricity.
- The contract contains a “use-it-or-lose-it” clause – NZAS is prohibited from scaling back and selling the electricity to a higher value user.

The Authority is consulting on possible options

Options the Authority could potentially advance through Code amendments

- Status Quo
- Prohibit “use it or lose it” clauses
- Authority pre-approval of large contracts
- Require public offering of all (or some % of) hedge contracts
- Require public offering of large hedge contracts
- Extend trading conduct provisions to hedge markets
- Non-discriminatory pricing rules
- Hybrid of non-discriminatory pricing and pre-approval of contracts

Other options that could be considered by government

- Limiting the size of generators
- Virtual asset swaps

Key points

- The review makes a number of observations about the wholesale market, though drawing hard conclusions is challenging due to uncertainty about generators' costs.
- The Authority is concerned that all consumers might be paying too much for their electricity, because Meridian, supported by Contact, appears to have sold electricity to NZAS for $500M less than it cost to produce.
- The arrangement could be wasteful. The subsidy maintains demand and keeps prices high in the wholesale market. Households might pay up to $200 more every year.
- The Authority is seeking feedback on steps it can take now to prevent inefficient price discrimination occurring in the future.
- Addressing the potential issues the Tiwai situation raises is the first step in responding to the review and we are consulting on all options.
- More generally, the review signals the continuation of a focused programme of work on the wholesale market for the long term benefit of consumers.
- The Authority welcomes the input from all stakeholders on the review and their views on the actions that should stem from it.

Questions