Inefficient Price Discrimination in very large electricity contracts

Proposed Code Amendment

Consultation paper

Published on: 18 August 2022

Submissions close: 5pm 29 September 2022

1. Executive Summary

Background

1.1 In October 2021 the Electricity Authority (Authority) released the *Inefficient Price Discrimination in the Wholesale Electricity Market – Issues and Options* paper (Issues Paper). The Issues Paper was the Authority's immediate response to a significant observation from its review of competition in the wholesale electricity market, *Market monitoring review of structure, conduct and performance in the electricity market*.

1.2 The primary intent of the Issues Paper was to draw attention to the incentives on generators, which in combination with current market design and regulation, can potentially lead to arrangements which at the system level are wealth destroying and reduce benefits to consumers, using the Tiwai contracts to illustrate this potential. The Authority did not make any determination that the current Tiwai contracts were definitively inefficient – it was recognised "that alternative calibrations [of assumptions] can suggest that the arrangements are wealth-enhancing".[1] However, future contracts with similar features to the Tiwai arrangements have the potential to be inefficient and cause significant harm to consumers. The Issues Paper illustrated the mechanism and incentive for inefficient outcomes, and the magnitude of the inefficiency and resulting wealth transfer if such contracts were indeed inefficient.

1.3 The Authority received submissions on the Issues Paper from interested parties in December 2021, and having duly considered these submissions, is now seeking stakeholder views on a proposed amendment to the Code to address generators' incentives to maintain national prices through inefficient price discrimination.

1.4 The Authority recognises that inefficient price discrimination depends on generators' ability and incentives, and that these may change over time. With the anticipation of more large contracts in the near future, it is important to implement a timely response to ensure the industry is operating in the long-term interests of consumers. Relative to other solutions that may address generators' ability and incentives to undertake inefficient price discrimination such as structural changes of large generators, the Authority considers a Code amendment is proportionate, targeted and timely. The proposed Code amendment has been designed to target only contracts at risk of inefficient price discrimination. This approach reduces the risk of unintended consequences, is cost effective and is relatively quick to implement.

1.5 Later this year the Authority will publish a consultation paper with respect to the wider Wholesale Market Review on whether and how current settings may be improved to strengthen competition in the wholesale market, given findings from the 2021 review of competition in the wholesale market and the implications of the transition to 100% renewable electricity. This analysis will be informed by the relative arguments for possible changes to the wholesale market through structure, and conduct type regulation, as well as potential factors that may hinder or delay investment.

[1] Page vi, Issues Paper

Nature of the problem

1.6 The 'Tiwai Contracts' between Meridian Energy, Contact Energy and the New Zealand Aluminium Smelter (NZAS) highlighted the incentives generators may have to subsidise extremely large load customers that could otherwise credibly exit, reduce consumption, not expand or not enter the domestic market. This incentive arises from the increase in aggregate demand, arising from the large user's consumption, inflating electricity prices nationally to such an extent that the higher revenues generators earn from all other (inframarginal) consumers greatly exceeds the cost of the subsidy required to retain the large load user.[2] Such arrangements can be characterised as rent seeking – a situation where an entity seeks to capture more wealth for itself without adding to, and potentially destroying, wealth to society - by way of a sophisticated form of economic withholding. Generators effectively withhold supply to consumers by supplying electricity to a large load user that would otherwise have exited (or not entered the market) if they faced the true direct value of that electricity.

1.7 The Authority's concern is not *per se* with prices rising due to a large load user's consumption decisions. Price responses to legitimate changes in supply and demand conditions and expectations is the underpinning of an efficient market system, with prices serving as a credible signal to inform consumption, dispatch and investment decisions. Nor does the Authority object to price discrimination *per se* - selling at different prices to different consumers can increase wealth to society through expanding the number of consumers served.

1.8 The focus should be on facilitating price discrimination, which is efficient, and deterring price discrimination which is not in the long-term interests of consumers. Moreover, the Authority's concern is specific to the case where prices rise for other consumers because of a large load user's decision to consume more than they otherwise would due to generators' incentives to offer them access to electricity at a subsidised rate. Subsidising large load customers in this way creates the possibility that electricity is not being allocated efficiently. If the resulting increases in spot and forward prices can be sustained due to generators exercising market power without inducing entry, this distorts investment and electrification signals, and enables a wealth transfer from all other consumers to generators. This is unlikely to be in the long-term interests of consumers.

Scope limited to price discrimination with respect to assuring the efficiency of very large contracts that have the effect of increasing prices for other consumers

1.9 The Authority also sought feedback and evidence from interested parties on other forms of price discrimination that might warrant further consideration by the Authority. Some submitters suggested there were issues with access and pricing of wholesale electricity Contracts For Differences (CFDs) hedges for the independent retailers in the Over The Counter (OTC) market. The Authority was not presented with sufficient evidence of this being a problem such that it warrants further attention at this time. However, the Authority has recently partially addressed these issues through its recent Code changes with respect to improved transparency of internal transfer pricing. The Authority will continue to be mindful of the views expressed by submitters in its monitoring and when further developing and prioritising its future work programme for market design, including market making.

[2] A competitive response would ultimately be expected to put downwards pressure on prices as new generation enters the market which would reduce the profitability of the strategy to the generators. However, the quantum of electricity required to enable such a competitive response coupled with the relatively short term of the recent contracts may, along with other potential barriers to new investment (eg, Resource Management Act), dampen a competitive response and the profitability of the rent seeking strategy could persist for decades.

Problem definition indicates need for very targeted and timely intervention

1.10 Having considered the submissions the Authority considers that a significant issue exists. The particular concern is that in the absence of an expectation of a timely and competitive response, generators have incentives to enter, modify, or extend inefficient arrangements with respect to contracts:

(a) which involve a 'credible threat to consumption' – that is, they relate to a customer likely to otherwise exit or not enter the market (ie, not be attracted to locate domestically) or a customer who otherwise would reduce or not expand consumption,

(b) where the contract price is conditional on the consumption of a quantum of electricity by the designated large load user; and

(c) where the quantum of electricity involved is sufficiently large to materially increase prices being faced by other consumers (ie, that are not party to the arrangement).

1.11 Contracts with the potential to satisfy these conditions are very low in number – perhaps no more than two or three contracts each decade. However, they each are significant in terms of the share of national generation they are allocated and the potential for severe adverse impacts on consumer outcomes where they are inefficient. There are indications that a number of negotiations over consumption arrangements which meet these conditions will occur in the near to medium term. Examples include a possible new, modified or extended electricity contract for NZAS in advance of the conclusion of the current contract in 2024, and negotiations arising through the market development efforts of generators, most notably Meridian and Contact, to attract large load users such as a hydrogen plant and data centres to the lower South Island.

1.12 It is imperative that the appropriate solution to align generators' incentives with wider society's interests are in place as soon as possible to ensure market participants are confident that any future arrangements are efficient and in the long-term interests of all consumers. Contracts of this scale and upon which investment is contingent would likely be negotiated well in advance of the termination of any existing contract or breaking of ground on new investments. It is possible that any new contracts could have terms extending into decades. The adverse efficiency and wealth consequences of these contracts could be experienced for many years depending on the speed of the competitive response to provide sufficient net new investment in generation to replace the capacity committed the large load user. The Authority is of the opinion that the efficiency costs and wealth transfers associated with these arrangements are of a scale, even in the short term alone, to warrant interventions when they can be shown to be cost effective.

1.13 The Authority recognises that the generators' efforts to develop alternative large load users in the lower South Island will strengthen generators' negotiating positions and thereby mitigate the risk somewhat of inefficient contracts being entered into. However, the possibility remains that the generators may be unsuccessful in developing new demand from load users with sufficient willingness-to-pay to mitigate concerns with inefficient consumption.

Interventions under consideration

1.14 The Issues Paper identified a number of possible interventions which could be contemplated, subject to agreeing the nature, breadth and size of any problem. The inclusion of a possible intervention on that list did not mean the Authority was actively considering or favouring that option. Rather the purpose of the list was to provide a wide range of options for interested parties to consider, and to provide submissions on which options they thought were most appropriate or problematic for addressing the problem at hand (if one was deemed to exist), how any favoured options might be operationalised, and draw out alternative solutions.

1.15 Having considered the points raised in the submissions and further developed the problem definition, the Authority does not consider that the options as set out in the Issues Paper are optimal. The options in the form set out in the Issues Paper are not being advanced for a range of reasons including that they poorly target the problem (raising the possibility of unintended consequences), are too inflexible (raising the possibility of unduly restricting legitimate commerce) or are disproportionate (and a more cost-effective solution could be available).

1.16 Rather, the Authority's proposal builds on some elements of the options in the Issues Paper. The Authority considers that the most efficient intervention will be one which precisely targets inefficient price discrimination of the form raised by the Tiwai contracts - the size of the load must be of a scale that the entry, expansion, reduction in consumption or exit decision by the load user would materially shift prices, and the contract must specify that the load user consumes the electricity. Moreover, the intervention should target the enablers of inefficient price discrimination:

(a) situations where the value of the contract to the generator[3] is below the generator's best alternative value (ie, what the generator, acting rationally, could reasonably expect to earn over the duration of the contract, for the volume of electricity in the contract and other resources allocated to support the contract, in the absence of the contract and taking into account any credible threat to consumption); and

(b) contracts which prohibit or introduce barriers on the load user's ability to reduce consumption and resell the electricity, as these restrictions prevent reallocation of electricity to its highest valued use.

Such an approach would be effective at prohibiting inefficient contracts yet still enable efficient ones, preserve flexibility in contractual arrangements, reduce compliance costs for generators and the Authority's administration costs, and avoid unintended consequences.

[3] Taking into account the contract price but also any other relevant value features of the contract such as location, load profile, demand response and price separation provisions, clauses 'pegging' the electricity price to the trading conditions facing the large load user eg, electricity price is linked to the price of aluminium, counterparty credit risk, value of maintaining an uninterrupted commercial relationship and any forms of financial support provided by the generator.

1.17 The Authority also considered the challenges of an intervention which relies upon deriving a load user's willingness to pay. Other than in the event that a load user rejects an offer price and consequently exits or does not enter the market, the ceiling on a load user's willingness to pay is generally not observable in a credible form. Therefore, the Authority is instead focusing on whether generator's have sold electricity for less value than the best alternative value they would earn, in the event of the load user making a credible threat to consumption. Where a rational generator sells electricity for less than what they could reasonably expect to earn by putting it to some other use, then the question is why? The financial incentives of large generators in New Zealand are such that – in the case of very large contracts, where the price is tied to physical consumption by a designated large load user, and there is a credible threat to consumption – they may sell electricity to the large load user at a subsidy to achieve higher prices on their other generation.

Proposed interventions should not create disproportionate barriers or uncertainty for investment in new generation

1.18 The Authority is mindful that an intervention should not create unnecessary and disproportionate barriers or uncertainty for very large contracts linked to investment in new generation. In upcoming years, a significant amount of investment is needed to transition to 100% renewables. The Authority considers it would be inappropriate for the proposed interventions to apply to contracts such as PPAs which support the transition, to the extent that they result in improved supply of renewable generation, and do not lead to material increases in prices paid by other consumers. The proposed interventions should only apply to generation used to supply a large load user which would otherwise be used to supply the rest of New Zealand in the absence of the contract.

The proposed Code amendment the Authority is consulting on

1.19 Subject to consultation, the Authority considers that a Code amendment is required to prohibit very large contracts that contain inefficient price discrimination and to provide the Authority with greater visibility of these contracts for monitoring and compliance purposes.

1.20 In addition, the Authority is consulting on a voluntary clearance process which would give generators the option to gain assurance that the Authority would not investigate a proposed contract with the respect to the prohibition clause at a later date. "Cleared" contracts would be specifically exempted from the prohibition. Therefore, once a contract is cleared, the Authority could not pursue it for being in breach of the prohibition clause. This voluntary process would provide generators with the opportunity to assess and balance the risks of entering a contract which may subsequently be undone if it is in breach against any additional costs of the clearance process.

1.21 The Authority is consulting on a proposed Code amendment that would:

(a) apply to 'materially large contracts' (MLCs), being contracts (or combinations of contracts) relating to physical consumption of a quantity of electricity of net 150MW or more

(b) prohibit generators from giving effect to MLCs unless:

(i) the contract allows the large load user (buyer) to on-sell any un-used electricity under the contract without the load user being subject to any worse terms than if it had consumed the relevant quantity itself, or

(ii) the net value of the MLC is positive – ie, the direct value to the generator of the contract exceeds the value of the generator's best alternative, or

(iii) the Authority has provided clearance of the MLC (see below).

(c) require generators to disclose their MLCs to the Authority as well as supporting information explaining the rationale underpinning pricing, the implications of resale conditions and forecast impacts of the contract on a generator's group-level financial performance

(d) introduce a voluntary clearance regime which gives generators the option to de-risk contracts by obtaining clearance of draft contracts, or signed contracts that are conditional on clearance. If a contract is cleared (and that clearance remains effective and applicable), then the MLC is exempt from the prohibition at (b) above

1.22 If a generator opts for voluntary clearance, it must provide the Authority with the proposed contract and the same supporting information as required under the disclosure regime (under (c) above) to allow the Authority to determine whether it is eligible for clearance (based on the Authority being satisfied as to either (b)(i) or (ii) above). The Authority would generally have 45 business days to make its decision, and a generator would need to enter the contract within 20 business days of clearance, otherwise clearance lapses. The clearance would remain effective and applicable unless key aspects of the contract are changed post-clearance or the information provided by the generator in support of the clearance is later shown to be incomplete or inaccurate.

Next steps

1.23 The Authority recognises the costs and benefits of the proposed amendment but considers the benefits outweigh the costs and are in the long-term interest of consumers. The proposed amendments are in compliance with the Code amendment principles.

1.24 The Authority welcomes feedback on the problem definition and proposed amendments outlined in this paper.

1.25 Submissions are due by 29 September 2022. Subject to submissions, the Authority is aiming to make a decision by March 2023 at the latest whether or not to proceed with the proposed Code amendments, including any enhancements identified through the consultation process.

Contents

2. What you need to know to make a submission

What this consultation paper is about

2.1 The purpose of this paper is to consult with interested parties on the Authority's proposal to implement a proposed Code amendment to address the prospect of inefficient price discrimination. The amendment would prohibit certain large contracts unless either the value of the contract to the generator is equal to or exceeds the value of the generator's best alternative or the contact allows the load user to reduce consumption and on-sell the electricity at no worse terms than if it had consumed the electricity itself, and would require generators to disclose large contracts and supporting information to support the Authority's monitoring and compliance. The Authority also proposes a Code amendment to give generators the option of obtaining clearance from the Authority prior to signing or after signing where the contract is conditional on clearance. This Code amendment consultation provides interested parties with the opportunity to provide feedback to inform the Authority's decision to amend and/or proceed with its proposal.

How to make a submission

2.2 The Authority's preference is to receive submissions in electronic format. Submissions in electronic form should be emailed to inefficientpricediscrimination@ea.govt.nz with 'Inefficient price discrimination in very large contracts – consultation paper' in the subject line.

2.3 Please note the Authority intends to publish all submissions it receives. If you consider that we should not publish any part of your submission, please:

(a) indicate in a cover note which part/s should not be published;

(b) explain why you consider we should not publish that part; and

(c) provide a version of your submission that we can publish (if we agree not to publish your full submission).

2.4 If you indicate there is part of your submission that should not be published, the Authority will discuss with you before deciding whether to not publish that part of your submission. However, please note that all submissions we receive, including any parts that we do not publish, can be requested under the Official Information Act 1982. This means we would be required to release material that we did not publish unless good reason existed under the Official Information Act to withhold it. The Authority will consult with you before releasing any material that you have said should not be published.

When to make a submission

2.5 Please deliver your submissions by **5pm on 29 September 2022**.

2.6 This deadline allows six weeks for submissions. The Authority will acknowledge receipt of all submissions electronically. Please contact inefficientpricediscrimination@ea.govt.nz if you do not receive electronic acknowledgement of your submission within two business days.

Further information

2.7 The Authority's website contains useful background material about the Authority's previous work relating to inefficient price discrimination.[4]

[4] Available at: Wholesale market competition review — Electricity Authority (ea.govt.nz)

2.8 Please direct any specific questions or queries to: inefficientpricediscrimination@ea.govt.nz.

3. Issue the Authority would like to address

3.1. The purpose of this paper is to consult with interested parties on the Authority's proposal to amend the Code to:

(a) prohibit generators from giving effect to very large contracts that raise the prospect of inefficient price discrimination unless:

(i) the contract allows the large load user (buyer) to on-sell any un-used electricity under the contract without the load user being subject to any worse terms than if it had consumed the relevant quantity itself, or

(ii) the net value of MLC is positive – ie, the direct value to the generator of the contract exceeds the value of the generator's best alternative, or

(iii) the Authority has provided clearance of the MLC

(b) require disclosure to the Authority of very large contracts

(c) provide for a voluntary clearance regime.

3.2. This Code amendment consultation provides a formal process through which the benefits and costs of the various elements can be identified and scrutinised, to inform the Authority's decision making.

3.3. The Authority has received submissions from interested parties on its Issues Paper '*Inefficient Price Discrimination in the Wholesale Electricity Market – Issues and Options*'.[5] In this section we identify and address any material issues raised in the submissions, further demonstrate the rationale with respect to the problem definition, and explain the existing arrangements and potential problems with them.

The Authority's focus is on the potential for future inefficient price discrimination and not whether the Tiwai arrangements were inefficient

3.4. The Authority's focus is not whether the most recent iterations of the Tiwai contracts were in fact inefficient. Rather, the Authority is concerned with generators' ongoing incentives to enter into inefficient arrangements in future, as a means of capturing a greater share of the gains from trade, but in so doing reducing total efficiency and therefore welfare ie, rent seeking.[6] The January 2021 Tiwai contracts (and, as importantly, the offers made to NZAS by generators throughout 2020) highlighted a potential concern to the Authority. These contracts were used in the Issues Paper to highlight the nature of the potential problem, the conditions that may enable inefficient price discrimination, and the potential scale of the efficiency costs and wealth transfers from consumers to generators that the Authority considers incentivised this arrangement.

3.5. A number of the submissions received, most notably from the major generator-retailers, were focused on whether the Tiwai contract price was below the best alternative price in the event of an exit, and sought to demonstrate that the contracts were efficient and welfare enhancing. The Authority has considered the major objections raised in submissions with respect to the Authority's analysis of the efficiency of the Tiwai

[5] See Inefficient price discrimination in the wholesale electricity market – issues and options, an initial response to the wholesale market review. https://www.ea.govt.nz/assets/dms-assets/29/Inefficient-Price-Discrimination-in-the-Wholesale-Electricity-Market-Issues-and-Options-Discussion-Paper.pdf

[6] Rent seeking is the practise of investing resources to capture a greater share of the economic wealth created through trade, without a reciprocal contribution to productivity from activity by the entity seeking to capture more wealth. In colloquial speak, rent seeking is investing scarce resources to increase a party's share of the pie (wealth transfer) without growing the pie (wealth destruction).

contract, as set out in the Issues Paper, despite this line of inquiry not being critical to the Authority's preliminary analysis.

3.6. Having considered the arguments made by submitters, and for the purposes of responding to those submissions, the Authority observes that the Tiwai contracts have significant potential to be inefficient, and may be an example of the exercising of market power by generators. Generators had the capacity to maintain wholesale spot and future prices paid by consumers not party to the Tiwai contract, and, as such, had incentives to retain NZAS in the New Zealand market other than the expected direct revenues of maintaining a commercial relationship with NZAS.

3.7. This observation is made having regard to a number of considerations, including:

(a) The estimation of the best alternative value of the electricity supplied relative to the contract price and other direct value adjustments in the contract (demand response provisions, transmission constraints, contract price pegged to commodity price, financial subsidies and the value of waiting given the irreversible nature of an exit etc.) The Authority is currently of the view that the generators had the incentives to sell below the best alternative value in the event of an exit. The question needs to be asked why a commercial party would forgo value on such a large volume of generation, if not to extract higher prices from other consumers?

(b) As part of an offer tabled by Meridian in early 2020, some generators other than Meridian and Contact offered to provide a "transmission underwrite", despite these generators not having a direct commercial arrangement with NZAS.[7] A possible, and in this context likely, explanation is that these generators anticipated financial benefits from higher prices for other consumers due to NZAS remaining, because these generators' transmission underwrite was not backed by any apparent direct revenue generating contracts with NZAS. Participation by these generators in the offer strengthens the proposition that the arrangement was motivated by preserving NZAS's consumption, even if it meant some generators providing significant subsidies. Presumably generators anticipated these costs would be more than offset by the higher spot and forward revenues they would enjoy from other customers over the life of the contract. This implies that the generators may not have expected a competitive response which was fast enough or of the required scale to undermine the potential returns from this strategy.

(c) Retaining NZAS improves revenues across generating assets as a consequence of the resulting higher average national prices. The ability to influence prices is a measure of market power. The generators' focus on maintaining the prices facing other consumers, through retaining NZAS, is evidence of both the potential for and the incentive to exercise market power.

Q1	**Are there plausible reasons for why major generators with no commercial contract with NZAS would be willing to subsidise them staying, other than because of the impact NZAS's exit would have on aggregate prices facing all generators?**

[7] Meridian-Investor-Briefing-10-July-2020-Live-Transcript.pdf (meridianenergy.co.nz)

The focus at this time is on a conduct response to address inefficient price discrimination in very large contracts

3.8. The risk of inefficient price discrimination occurring arises from both the generators' ability to subsidise a contract and recover that subsidy from higher prices from other consumers, and their incentives to do this. The remainder of this paper seeks to address generators' incentives to undertake inefficient price discrimination, employing a conduct response to the problem.

3.9. There is a need to have an effective solution in place prior to any new or amended/extended contracts, which might raise inefficient price discrimination concerns and with possible tenures reaching into decades, to provide assurance that these contracts are efficient and in the long-term interests of consumers overall. Relative to other solutions that may address generators' ability and incentive to undertake inefficient price discrimination such as structural changes of large generators, the Authority considers a Code amendment is proportionate, targeted and timely. The proposed Code amendment has been designed to only target contracts at risk of inefficient price discrimination which reduces the risk of unintended consequences, is cost effective and relatively quick to implement.

3.10. The ability for generators to implement inefficient price discrimination strategies relies on a number of factors:

(a) The more upward sloping the supply curve the greater the returns to generators from stimulating a marginal increase in demand – relatively small changes in supply significantly affect prices. This feature provides the possibility generators may be able to recover any subsidy required to attract or retain a large load user's marginal consumption. The steepness of the supply curve is driven by the national generation supply function, and potentially the exercising of market power.

(b) Generators' ability to maintain a positive spread between the cost of the support being provided to the large user and the marginal increase in the returns from their other generating assets due to the large load user staying or entering the market.

i. The cost of providing the support to a specific load user can be expected to vary across individual and consortiums of generators, due to location of generation assets, transmission constraints, size of the load, and the degree of reliance on internal generation rather than having to purchase generation. In the case of NZAS, Meridian and Contact are the two most obvious generators to provide this support.

ii. The returns from other generation, to cover any support, will be a function of the size and geographical spread of these generating assets[8]. Individual generators have greater incentives to support these arrangements the larger their generation base. Reducing the scale of generators may better align their individual incentives with the interests of consumers - smaller generators experience less revenue uplift from inefficient price discrimination due to their smaller generation base. Moreover, the transaction costs between generators seeking to coordinate an inefficient price discrimination strategy will be higher, making such arrangements less likely by reducing the scale of generators.

8 Where other generators believe that Meridian and Contact together may not have sufficient financial incentive to retain NZAS, they may elect to provide additional support, because retaining the large user avoids depressing revenues on their unhedged generation. However, this support may not be by way of a subsidised price, because these generators may not be the least cost means of supplying the customer.

(c) The potential absence of a sufficiently large and timely competitive response to drive down market prices. For example, net new generation investment in lower cost plant would be expected to drive down incumbent generators' returns on their other assets. Barriers to investment in new generation from new entrants will slow this competitive response. Moreover, the quantum of energy required to replace these loads (net new 13% of national generation in the case of the NZAS) plus the lead times for new investment coming online means that these competitive responses might take years, if not decades, to respond. Finally, it might be argued that inefficient price discrimination that increases prices overall should attract greater new investment. However, a contract with relatively short duration (4 years in the current case) over such a large quantum of demand could serve to deter new investment, as there is the risk that prices will fall significantly in the event of an exit. This means that generators who have some ability to determine whether similar contracts proceed in future, have some leverage over the degree of success and payoffs from new entry.

3.11. Any structural response would seek to address the factors which enable generators to successfully implement inefficient price discrimination strategies. At this time, the Authority considers that a structural response would be disproportionate. It is also unlikely that structural changes could be implemented in advance of contracts with the potential for inefficient price discrimination being entered into in the near future.

4. Problem definition

Tiwai contract price raised questions

4.1. Upon learning about the pricing of the Tiwai contracts, negotiated at a 'headline' price (before rebates) significantly below forward prices for the term of the contract, the Authority became concerned with the generators' motivations to enter these contracts and whether the contracts were consistent with the efficient allocation of electricity, the integrity of pricing signals, and the long-term interest of consumers.

4.2. The Review highlighted the impact of NZAS's stay/go decisions on future prices of electricity, and raised the possibility of material adverse consequences for all other consumers in the event that NZAS's decision to stay was conditional on receiving subsidised supply. This strategy was enabled through price discrimination.

4.3. The Issues Paper used these contracts to provide an illustration of how price discrimination may, in some cases, be neither efficient nor in the long-term interests of consumers. The Authority estimated the potential efficiency costs to be in the order of $57 million to $117 million per annum. Generators may be willing to subsidise NZAS because NZAS had a credible threat of exiting, and the reduction in national demand if NZAS exited would reduce generators' collective spot market revenues by as much as $850 million per year[9], more than offsetting any subsidy.

4.4. The intention of the Issues Paper was to raise the issue of how generators may be incentivised to employ price discrimination as a rent-seeking device and to seek feedback on the potential issue. Rent seeking is situation where an entity seeks to capture more wealth for itself without adding to, and potentially destroying, wealth to society - by way of a sophisticated form of economic withholding. Generators effectively withhold supply to consumers by supplying electricity to a large load user that would otherwise have exited (or not entered the market) if they faced the true direct value of that electricity.

[9] page iii, Long-form report (ea.govt.nz)

4.5. The underlying rationale considered in the Issues Paper for such behaviour by generators is the scope to increase the share of producer surplus, which would be at the expense of consumer surplus. The generator's forgone revenues from supplying the large user at below the best alternative price, arising in the case of inefficient price discrimination, can be thought of as the 'real cost' that a producer is prepared to pay or expend to increase its overall return.[10]

4.6. Further investigation of the Tiwai arrangement highlighted to the Authority a number of broader concerns beyond just the contract price:

(a) All generators, not just those in a direct commercial relationship with NZAS, have financial incentives to retain or attract very large load users with potentially low willingness-to-pay. This suggests that the direct contract revenues generators earn from that large customer are not the only incentive to subsidise a large load user. Rather, it could be said that generators are willing to subsidise large users directly, in exchange for a commitment to consume some minimum load, because the resulting increase in aggregate demand raises price for inframarginal consumers as a result of more expensive generation being required to satisfy the additional demand.

(b) The contract had restrictions on the large load user's ability to on-sell the electricity which adds weight to the possibility that the direct value of the contract to the generators is less than the best alternative price of the electricity in the event of the load user exiting.[11]

Q2	**Do you agree that where there are restrictions on reselling by large users who are in a position to threaten exit, the Authority should have a concern to examine whether the expected overall value of the contract to the generator is less than the best alternative value in the absence of the contract?**

Problem definition

4.7. The Authority's concern is that the preferential terms (most notably the lower cost of electricity[12]) could constitute a subsidy designed to bias extremely large load users', notably NZAS's, decision to 'stay', as a means for the generators to retain load and thereby elevate prices for other consumers. The ability to influence price is evidence of market power, and the Authority wishes to satisfy itself that this potential is not being used by generators to compromise overall consumer benefits.

[10] See Motta, 2004, pp 44-45.

[11] It is recognised that restrictions on reselling are necessary to enable efficient (and inefficient) price discrimination strategies (see Varian (1989). However, the expected value of restrictions on resale is only positive to the generator, at the time the contract is agreed, where the contract price is less than the opportunity cost of the bundle of electricity in the event of exit or non-entry. Assume the price the electricity is contracted to the large load user is at or above the expected price of that electricity in the event of that large user leaving. In this situation the generators are better off allowing reselling in the event of exit – they would expect the contract price they have with the large load user to be higher than what they expect to be able to sell it for in the event of exit. The restriction on reselling only protects generators' interests where the contract price is below the expected price of the said electricity in the event of an exit. This example is binary in its treatment of stay/go decisions. A large load user might reduce operations and on-sell the surplus energy covered by the agreement, and this could be disadvantageous to the generators. However, the interests of generators could be protected from this eventuality by having different prices for various tranches of consumption. The current Tiwai arrangements has two levels of consumption provided for.

[12] In addition to preferential price, in one offer made to NZAS, a number of generators each offered NZAS a "transmission underwrite" to induce them to stay in New Zealand. This offer was referenced by Neil Barclay in a briefing to investors in July 2020. Meridian-Investor-Briefing-10-July-2020-Live-Transcript.pdf (meridianenergy.co.nz)

4.8. Generators may have incentives to supply large load users, such as NZAS, at prices below the 'the best alternative value' (ie, what the generator, acting rationally, could reasonably expect to earn over the duration of the contract, for the volume of electricity in the contract and other resources allocated to support the contract, in the absence of the contract and taking into account any credible threat to consumption) where:

(a) An extant user can make a credible threat to consumption[13], and

(b) because of the sheer scale of their load demand, the user's decision to make a credible threat to consumption would have the effect of materially changing national supply and demand conditions and would therefore impact the prices paid by all other (unhedged) consumers and the revenues received by generators.

4.9. The Authority is seeking to gain assurance that in future generators will not employ price discrimination as a rent-seeking device when negotiating large contracts with load users. The specific concern is future contracts could be used by generators to provide subsidies to influence exit, non-entry, reduction in consumption, or non-expansion decisions by very large energy consumers, so as to enable generators to increase their profits from other consumers.

4.10. The subsidy in this case is from generators offering electricity at a price below what they would otherwise reasonably expect to earn from it, taking into account any other relevant direct value components of the contract (eg, location and load profile, transmission constraints, demand response,). The mechanism and generators' motivations are not dissimilar to physical withholding, but instead of spilling water, the electricity is sold at a subsidised price to a large load user that would otherwise exit (or not enter) the market[14].

4.11. Inefficient price discrimination enabling this form of rent-seeking behaviour will compromise efficient outcomes in at least three ways:

(a) some consumers may consume less electricity than they otherwise would because they face inefficiently high prices. (Moreover, all consumers will pay more than they otherwise would, reducing their ability to save or consume more of other goods and services.)

(b) the large load user may wastefully consume too much electricity, because they face inefficiently low prices that are not reflective of the costs of production.

(c) The resultant market prices may distort signals for investment in generation and electrification, thereby compromising the efficient transition to a low emissions economy.

Q3 Do you agree with the problem definition? If not, why not?

[13] See para 1.16(a)

[14] Generators' may be incentivised to intentionally spill so as to withhold supply and increase net revenues. A similar outcome can be achieved through supplying a large load user at a price which induces the load user to stay (or enter), and is below the opportunity cost. Generators may be incentivised to subsidise the cost of electricity for these large users when the cost of the support necessary to ensure the load users stays (or enters the market) is more than offset by the higher prices paid by other consumers.

Other forms of possible price discrimination outside of scope

4.12. Due to the Issue Paper's discussion document status, the Authority took the opportunity to invite market participants to comment on other forms of inefficient price discrimination that might be occurring elsewhere in wholesale electricity markets. Section 6.10 of Issues Paper, for example, notes that the problem identification in the Issues Paper is focused on the Tiwai contracts. It goes on to acknowledge the possibility of Inefficient Price Discrimination happening elsewhere in the sector; including Over The Counter (OTC) derivative agreements between independent retailers and large generator-retailers, and Power Purchase Agreements (PPAs) between independent generators and large purchasers.

4.13. Some submitters, most notably independent retailers, claimed that OTC hedges were either unavailable to them or more costly than can be justified. However, the submitters did not provide sufficient new evidence in support of these claims to justify expanding the scope of this investigation to include OTC contracting between generator-retailers and independent retailers. However, the efficiency of OTC markets will continue to be monitored a part of the Authority's on-going hedge market development programme.

A very limited number of contracts have potential to increase market prices by means of inefficient price discrimination

4.14. At this time the Authority's concern with inefficient price discrimination is limited to very large contracts which, while low in number, due to their size, have a significant impact on national prices, and the consequences for allocative efficiency and consumer outcomes could be severe. Specifically, the Authority's concerns only arise for contracts (or a series of contracts) that influence consumption decisions because they are sufficiently large to materially increase spot and forward prices faced by other consumers.[15]

4.15. At the time of writing the Authority is aware of a number of large contracts which are being contemplated, which are of a sufficient scale to potentially raise inefficient price discrimination concerns. It therefore considers it necessary to address this problem immediately.

4.16. Participants who have evidence of other forms of price discrimination which may not be efficient or in the long-term interests of electricity consumers should not hesitate to contact the Authority.

Means of mitigating the Authority's concerns that such contracts are inefficient

4.17. The Authority's concerns are that the types of contracts being discussed in this paper may be inefficient, unless:

(a) the value of the contract to the generator is at or above the generator's best alternative value taking into account any credible threat to consumption and the relevant value components of each option (such as location, load profile, demand response, price separation, price pegged to profitability, other forms of financial support provided by the generator); or

(b) The large load user to the contract can reduce its consumption under the contract and resell that unused electricity in the wholesale market without being subject to any worse terms than if it had consumed the quantity of electricity itself. That is, there are no restrictions in the contract which make the contract price for any volume contingent on the large user consuming the electricity itself.[16]

[15] New Zealand consumption less NZAS consumption was in the order of 36,800,000 MWh for 2019. On this basis every $1/MWh increase in spot prices will increase generators' spot revenues by approximately $36M per annum.

[16] Varian (1989) demonstrates that preventing resale is a necessary condition for enabling a price discrimination strategy.

4.18. Demonstrating to the Authority that the value of the contract to the generator is above the best alternative value for that quantity of electricity, in the event of a credible threat to consumption (conditions (a)) would satisfy the Authority of no subsidy and that the electricity is being allocated efficiently. Demonstrating that the large load user can trade the electricity, and not be required to consume it to receive the contract price (condition (b)), would give the Authority assurance that, even in the event of a subsidy in the contract, there were no anti-competitive barriers to the efficient allocation of electricity.

Q4 Do you agree that for the types of contracts the Authority is interested in ensuring the efficiency of (very large contracts which have the potential to shift market prices for other consumers), they will prima facie be inefficient if:

a) the value of the contract to the generator is below the generator's best alternative value taking into account any credible threat to consumption and

b) the large load user is not able to on-sell any consumption under the contract it forgoes and remain subject to the same terms as if it consumed the electricity itself?

Best alternative value is the relevant hurdle for demonstrating an arrangement is efficient

4.19. The 'best alternative value' (ie, what the generator, acting rationally, could reasonably expect to earn over the duration of the contract, for the volume of electricity in the contract and other resources allocated to support the contract, in the absence of the contract and taking into account any credible threat to consumption) – is the appropriate benchmark against which to measure the allocative efficiency of a trade. Resources allocated in this way will tend to go to their highest valued use, which is consistent with maximising society's welfare– otherwise resources could be re-allocated to increase the gains from trade.[17]

4.20. The reliance on best alternative value, is a measure of opportunity cost and an indicator of the efficient allocation in other contexts across the electricity sector. For example, to be efficient, dispatch offers by generators ought to include an opportunity cost for the fuel, not simply the marginal, incurred cost. Internal transfer pricing methodologies used by generator-retailers are tied to forward prices, which serve as a proxy for the opportunity cost as they are a measure of the price at which the electricity could have been sold to a third party. Incorporating opportunity cost (best alternative value) in this manner ensures that generators' offers are efficient through time, and competition is promoted between vertically integrated and independent retail businesses.

4.21. Using the Tiwai arrangement as an example, a further and material consideration in that case was whether the relevant alternative prices should be those for when NZAS has exited or those embodied in prices when NZAS is understood to be 'staying' in the market. The latter being more reflective of the costs of having NZAS and all other demand in the market, with a greater reliance on higher-priced thermal generation. However, the prices on exit are more reflective of the best alternative value for the generators. In principle the latter should incorporate expectations regarding generators' ability to develop additional load over the lifetime of the contract.

4.22. In making a determination of the delta between the contract value and the best alternative value on exit, regard must be had to relevant value components such as location, the realised price of the entire volume of electricity - the value of the specific volume of generation – and any other distinctive values of the contract or relationship.

17 See page 6, Bidding in Energy-only Wholesale Electricity Markets, Yarrow and Decker 2014.

Direct value components need to be recognised

4.23. Taking into account direct value components including the contract price and additional value components is appropriate when assessing the value of the contract to the generator. For example, where the best alternative value is assumed to be selling the electricity on the ASX futures, it is legitimate to make allowance for direct value components in the contract including, but not limited to:

(a) prices for baseload futures contracts over the period covered by the contract

(b) node location

(c) load profile differing from base load

(d) demand response provisions

(e) price separation provisions

(f) clauses 'pegging' the electricity price to the trading conditions facing the large load user (eg, electricity price is linked to the price of aluminium)

(g) value of maintaining an uninterrupted commercial relationship with the load user

(h) relative differences in counterparty risk

(i) any other form of financial inducements or benefits associated with the materially large contact.

4.24. When assessing the value of the contract to the generator and the generator's best alternative value, in both cases the scope for the benefits should be limited to the direct benefits the generator might reasonably expect. Importantly, these calculations should expressly exclude any financial benefits the generator might expect to enjoy across their wider business as a consequence of the contract eg, higher prices from other consumers. The justification for excluding these "portfolio" benefits is because in a competitive market a generator cannot influence prices. However, transactions of the size being contemplated will, by definition, impact regional and national prices.

4.25. A key principle in this regard is that the analysis should focus on the direct value of these contracts at the time of negotiation and not what they proved to be worth given subsequent events. For example, the Authority disagrees with the argument made in some submissions that the Tiwai contractual arrangements are efficient because of the subsequent increase in global aluminium prices and therefore NZAS's willingness to pay will have increased since the contract was signed. Such an approach would introduce hindsight into the evaluation of decisions. Rather, the Authority considers it is more appropriate to recognise and explicitly price the option value to generators of providing short term support during a downturn in the commodity cycle in exchange for the potential for higher prices from the load user when trading conditions improve.

Q5. Do you agree with the principles:

a) the relevant counterfactual against which to assess the value of the contract to the generator is the best alternative value taking into account any credible threat to consumption?

b) direct value components of the contract including and in addition to the contract price should be recognised and taken into account when assessing the value of the contract to the generator, so long as the generator can value them in a transparent and credible manner?

c) the value to the generator from increases in prices to other consumers as a consequence of the contract should be excluded from the assessments of the value of the contract to the generator?

d) the assessment should be made at the time the offer was made (or extended or renegotiated by the generator) on the basis of information in the immediate lead up to the generator signing the offer or contract?

The Authority's view on price discrimination

4.26. Price discrimination can be a legitimate practise for increasing society's wealth. Price discrimination enables producers to capture a greater surplus through trade, so that they can recover fixed costs in capital intensive industries and are incentivised to increase welfare-enhancing production for the long-term benefit of consumers. However, price discrimination can also enable rent seeking by producers which destroys welfare – the Authority refers to this as "inefficient price discrimination".

4.27. The specific concern, which the Tiwai contracts raise, is the prospect that contracts could provide financial incentives which influence the exit (or entry) decisions of very large electricity consumers on uneconomic terms, and in doing so, enable generators to increase their profits from other consumers.

Background

4.28. Price discrimination is typically understood as a mechanism by which producers obtain greater producer surplus by charging different consumers (or consumer groups) different prices.[18] The option to employ price discrimination will always improve producer welfare because it expands the choice set for producers, as a single uniform price is a subset of multiple prices eg, multiple prices charged to different consumers or consumer groups could all be set to the same single value. The implications of price discrimination for consumer surplus are more ambiguous.

4.29. As noted by submitters, price discrimination is generally understood to be of one of three forms:

(a) First degree ('perfect') price discrimination – each consumer is charged exactly their willingness to pay (WTP) for a good or service, making the consumer indifferent between consuming and not consuming the good or service and simultaneously maximizing producer surplus from each sale;

(b) Second degree price discrimination - rather than specifying a different price for consumers of a given type the producer specifies a family of prices that varies with some attribute (or attributes) of the product being sold. Consumers then self-select which price to pay by selecting a product with given attributes. For example, different prices may be applied when consumers buy different quantities of a good or service, or a consumer purchasing airline services may opt for first class, business class or economy (coach) class travel;

(c) Third degree price discrimination - consumers are partitioned into different 'types' using some observed characteristic and each type is charged different prices. The Tiwai contracts are a form of third degree price discrimination.

4.30. Price discrimination is typically considered in contexts where a firm has a degree of market power and can set prices for the different consumers or different 'bundles' of goods, and consumers are price-takers. (Conversely, one could consider a situation where a producer provides a given quantity to each sub-market and the prices are then determined by some bidding mechanism.)

[18] See for example Nicholson (1985), Tirole (1988), Varian (1989), Motta (2004), and Fumagalli, Motta, and Calcagno (2018)

4.31. The exact mechanism by which prices are determined is an important concern in discussing how generators use price discrimination as a rent-seeking device. A key point is that in standard price discrimination analyses firms have considerable latitude over how to price for the sub-markets or for the distinct groups of consumers. We will return to this point when we discuss price discrimination in the New Zealand wholesale market.

4.32. In conventional economic analysis of price discrimination,[19] the marginal revenue from the last unit sold in each market will equal the marginal cost of producing that unit.20 Following on from insights first provided by Ramsey (1928) the optimal mark-up of price over marginal cost for sub-market i will vary depending on the demand elasticity of the sub-market. Although marginal cost equals marginal revenue for each sub-market, the resultant prices that optimise profit will differ across markets when the demand elasticities for the sub-markets differ.

4.33. When perfect ('first degree') price discrimination is possible, consumers will consume exactly the amount that they would if a benevolent central planner was allocating goods and services – though each consumer would pay the equivalent of their upper bound willingness-to-pay and there would be zero consumer surplus. In 'the real world' consumers' willingness to pay are unobserved and can only be inferred imperfectly, thus it is a priori unlikely that price discrimination will replicate a perfectly 'efficient' outcome – perfect price discrimination is a useful theoretical benchmark, but is not generally feasible in practice.

4.34. It is theoretically possible for price discrimination to enhance overall welfare by expanding the array of consumers that are served. For example, under 'first degree' (perfect) price discrimination, consumers that would be priced out of the market (if there were a single market price) would now be able to purchase the good at a price tailored to their specific willingness to pay, which is above the supplier's best alternative value. However, price discrimination can also be used for rent seeking by suppliers.

4.35. Varian (1989) notes three conditions required to successfully implement price discrimination: i) market power so that the seller can set prices in some fashion; ii) the ability to sort consumers; and iii) the ability to prevent resale. Restrictions on resale are essential for executing a price discrimination strategy, otherwise customers with access to lower prices could on-sell to those that face higher prices.

4.36. Varian (p. 599) notes that central questions for microeconomists and regulators are "To what degree does price discrimination of various types promote economic welfare?" and "What types of price discrimination should be encouraged and what types discouraged?"

Price discrimination mechanisms in the electricity wholesale market

4.37. Prices for electricity in the New Zealand wholesale market are determined through a number of mechanisms. Spot prices for 30-minute trading periods are determined through the offer behaviour of generators in tandem with the load demanded by consumers, with prices mediated by the system operator dispatching generators to meet said load at lowest possible cost. Generators, retailers, consumers and others can bilaterally agree forward prices in physical supply contracts and contracts-for-difference (CFDs), such as futures traded on the ASX or more bespoke contracts traded through over-the-counter markets. These forward contracts in effect overlay the incentives (revenue and costs) of electricity provided by the spot market at different frequencies and time horizons.

[19] For example, production sets are assumed to be convex, with no indivisibilities.

[20] If marginal revenue (MR) does not equal marginal cost (MC) in a given market (MR≠MC) then profits can be increased by reducing output if MC>MR and by increasing output if MC<MR. If MR(i)≠MR(j) for sub-markets i,j then profit could be increased by reallocating sales between the two markets.

4.38. As noted earlier, price discrimination usually reflects firms with a degree of market power setting various prices for different consumers. In the New Zealand electricity market, generators have the ability to offer derivative prices at which they are prepared to transact, while spot prices are determined by the mix of offer prices and offer quantities from generators and load demanded by consumers. Given standard assumptions about the efficiency of financial markets, derivative prices should reflect expectations about the evolution of spot prices over the horizon relevant for the derivatives, with appropriate adjustments for risk.

4.39. Price discrimination for extant consumers that are not entering or exiting the market does not influence the returns from inframarginal consumers. It is consumers that are considering exiting the market and prospective consumers that influence aggregate load. As NZAS is such a large consumer of electricity it has a material impact on load and hence on pricing in the spot and forward market.

4.40. As mentioned above, most price discrimination analyses implicitly assume that the seller can optimise the price set in each of the sub-markets. In the wholesale electricity market spot prices are not determined directly, but are the result of the complicated interplay between load (demand) and offer pricing (supply). In the Tiwai context, the contract-for-differences negotiated between Meridian and the NZAS (and implicitly supported by the contract between Contact and Meridian) may have changed the financial incentives of NZAS and facilitated NZAS remaining in the market for longer than might otherwise have occurred. The ability to influence aggregate load provides the generators with the mechanism to affect prices for all consumers[21].

Difficulties in measuring willingness to pay

4.41. NZAS's decision to remain in the market – as made at the time of the contract with the information then available – would have been inefficient if the expected returns to NZAS (as represented by their average, discounted willingness-to-pay for the contract) may have fallen below the cost of meeting that supply. Potentially, NZAS may not have paid enough for the electricity being consumed to compensate for the system costs of generation. Determining whether the negotiated price falls below an appropriate estimate of the system cost is difficult because the negotiated price should be some average of discounted future prices as modified by risk and dependent on the information set available at the point at which the contract was made.

4.42. The appropriate sequence of expected spot prices also needs to take into account locational factors that influence pricing. A natural way to consider these adjustments is to use financial prices to estimate these quantities, eg, using futures prices (such as those priced at Benmore) together with financial transmission rights (FTRs) between Invercargill (INV) and Benmore (BEN).[22]

4.43. Given the upper bound on a user's willingness to pay is only observable if they exit, it is difficult to determine whether a contract price (adjusted for distinctive features of value to the generator) that is below the best alternative price of the electricity is inefficient, as all we can imply is the upper bound of the user's willingness to pay is above the contract price but not necessarily the best alternative price.

An alternative approach is to focus on generators' incentives

[21] Generators can also influence aggregate supply through their offer behaviour including through consideration of opportunity cost of supplying today versus the future, or through economic withholding. The interplay between economic withholding and opportunity cost is opaque due to the varying assessments of opportunity cost.

[22] FTRs are not widely traded and so the extent that they properly reflect assessments of location price differences might be questioned. Nevertheless, these are the financial prices that are readily available to estimate locational price separation.

4.44. An alternative approach, and the one proposed in the Code amendment, to test the efficiency of a contract is to consider generators' incentives, and ask why they would be willing to supply (or insure, in the case of a CFD) electricity below the value of the generator's best alternative. If the value of the contract to the generator is below the value of the generator's best alternative, it is reasonable to assume that the generator's decision to supply is motivated by rent seeking of the type being discussed here.

4.45. The Authority's analysis of the Tiwai offers and the resulting contract, is that the contract has the potential to be inefficient. More importantly, the generators had incentives to offer far lower prices than was agreed and could in fact have done so if they had not agreed on the price as it currently stands. These lower offers have the potential to be well below the best alternative price of the electricity in the event of exit, and there is the possibility that offers at this level could be considered in future. The incentive amongst all generators to preserve revenues from inframarginal customers through subsidizing a large load user is further evidenced by other major generators, none of which were parties to the latest Tiwai contracts and therefore had no direct revenue relationship with NZAS, contributing transmission underwrites in an offer made to NZAS in early 2020.[23]

Disposal costs

4.46. A key observation is that generators would never subsidise a load with prices falling below marginal cost if free disposal was possible – that is, if a generator could spill water at zero cost, they would never choose to incur the cost of using that water to supply electricity to a very large load user at a price below cost. However, if free disposal is not possible (or is limited in scope), then the producer may countenance selling at a loss to avoid the disposal cost.

4.47. Since the Electricity Authority's decision about the 2019 undesirable trading situation (UTS), it is apparent that there are constraints on generators ability to freely dispose of water, ie, at least some limits on economic withholding. Selling electricity below cost to a large industrial user may be a more sophisticated and lower cost way of implementing economic withholding, with the intention of bolstering aggregate prices. However, the economic efficiency and wealth transfer considerations are common in both cases.

4.48. In contrast with physical spilling, the withholding of electricity in this way generates revenues from sales to the large user (though less than the best alternative price). But, similarly to physical spilling, disposing of water in this way creates potentially significant costs to the generators in the form of breaches of existing (and future) Code and (perhaps more importantly) the threat to generators' social license, and consumers' and investors' confidence in the design and structure of electricity markets.

5. Problems with the existing arrangements

5.1. Under the current Code, there is no obligation on generators to disclose to the Authority large contracts or any associated information supporting their pricing and structure. If it wanted to learn more about these contracts, the Authority would need to rely on its powers under section 46 of the Electricity Industry Act 2010 (which can only be exercised for one of the purposes set out in section 45 of the Act) to require information from a generator to gain visibility of all of the contractual terms and rationale.

5.2. In the event of the Authority discovering a potential case of inefficient price discrimination, it is not obvious that there is any means of correcting or penalising generators and therefore disincentivising this form of rent seeking:

(a) there are no provisions in the Code which prohibit contracts that result in inefficient price discrimination;

[23] Meridian-Investor-Briefing-10-July-2020-Live-Transcript.pdf (meridianenergy.co.nz)

(b) the trading conduct rules do not apply as they only apply to the spot market; and

(c) compared to the proposed Code amendment below, the UTS provisions are reactive so may not be as practical to address and disincentivise inefficient price discrimination.

6. Issues raised in submissions

6.1. The focus in this section is on the key issues raised during the consultation process. Having considered the arguments, the Authority considers that inefficient price discrimination, of the type raised by the most recent Tiwai arrangements, is a pressing issue which may justify intervention.

6.2. The following provides a brief summary of the major issues raised by submitters, and the Authority's response.

Issue raised by submitters

Any competition and efficiency concerns raised by the Tiwai contracts are a symptom of a more fundamental problem with market structure and power.

Authority's response

Inefficient price discrimination in the wholesale market is the "first cab off the rank" in response to the observations made in the Wholesale Market Review. The response to inefficient price discrimination will form part of a wider work programme which will be reflective of other observations made in the Review, as well as supporting the transition to a low emissions energy system.

The Authority is of the view that progressing its response to inefficient price discrimination, as quickly as feasible, and ahead of the wider response to the Wholesale Market Review is a priority. Our analysis suggests the inefficiency could be very large, the arrangements have material implications for consumer outcomes, and there is a risk of similar arrangements being negotiated in the near term and which could further embed these consequences for decades.

Issue raised by submitters

Inefficient price discrimination is happening elsewhere in the sector.

Authority's response

Some submitters, most notably independent retailers, claimed that OTC hedges were either unavailable to them or more costly than can be justified. However, these submitters did not provide sufficient evidence in support of these claims to justify expanding the scope of this investigation to include OTC contracting between generator-retailers and independent retailers. The efficiency of OTC markets will continue to be monitored as part of the Authority's on-going hedge market development programme.

Issue raised by submitters

The Tiwai contracts have distinctive features and occurred at a unique point in time. Therefore, no enduring intervention is required and the work stream should not be a priority for the Authority.

Authority's response

The Authority acknowledges the unique circumstances contributing to the current terms and conditions pertaining to the current Tiwai contracts. However, the Authority is of the view that the broader issue highlighted by the Tiwai contracts will persist into the future. Market confidence and the long-term interests of consumers are best served by addressing this issue now:

- Generators continue to have a commercial incentive to price electricity on very large contracts tied to consumption at below opportunity cost, rather than risk losing the demand
- Contracts of sufficient size to be of a possible concern are currently being contemplated
- The resolution of transmission constraints won't mitigate the risk of inefficient outcomes fully.

That said, the low incidence of these arrangements ought to be recognised in formulating an appropriate Code response. Any response needs to be targeted at the specific circumstances in which the problem can arise, notably very large contracts with the potential to materially impact generators' revenues from spot markets and other consumers. This targeted approach to assessing interventions will minimise uncertainty, economise both compliance costs facing industry and administration costs incurred by the Authority, and mitigate the potential for unintended consequences.

Issue raised by submitters

Problem not defined precisely or consistently.

Authority's response

The Authority's paper on Inefficient Price Discrimination was an Issues Paper and not a consultation paper proposing a specific Code change. Issues papers and the resulting submissions are intended to assist the Authority in determining whether there is a problem worth pursuing; shaping and more precisely defining that problem; short listing and refining possible interventions; and determining whether a cost-effective intervention exists. The articulation of a precise problem definition is not critical at the Issues Paper stage.

That said, the Authority is of the opinion that the problem definition was sufficiently precise for the purposes of an issues paper - that generators have rent seeking incentives to provide electricity to very large load users at prices below the opportunity cost[24] of that electricity, because the revenues they earn from higher spot and forward prices as a result of the contract exceed the subsidy. See the Problem Definition section of this paper for a more fulsome discussion.

The Authority does not agree with Meridian's suggestion that the Authority and its two independent reviewers have inconsistent opinions on the nature of the problem[25].

Issue raised by submitters

Analysis not grounded in the extensive economic literature.

Authority's response

The Authority does not agree with Meridian's suggestion that the test of whether price discrimination is efficient is simply an increase in the consumption of the output being produced (electricity). Rather, the economics literature suggests that it is necessary to show:

- an increase in output, and

[24] Opportunity cost is the value of the next-best alternative when a decision is made. In the Tiwai context it is the value the generators would have earned if they had sold the electricity to the highest valued alternative to selling it to NZAS. If the opportunity cost is expected to be greater than the benefit of selling to NZAS, then the obvious question is what motivated the generator to sell at this price? The contention here is that it is the higher returns which the generators' earn from other consumers.

[25] page ii Efficient price discrimination in the wholesale electricity market Sapere, Meridian submissionhttps://www.ea.govt.nz/assets/dms-assets/29/Meridian-submission.pdf

- that the value to society of this additional output is positive.

The Authority's contention is that generators' have incentives to subsidise very large load users with a credible threat of exit, creating the possibility that electricity is not being allocated efficiently.

Some submitters argued that clauses preventing resale, such as 'use-it-or-lose-it' clauses, are necessary for enabling efficient price discrimination and should therefore be allowed. The Authority does not dispute that allowing restrictions on reselling is necessary to enable welfare enhancing instances of price discrimination. However, restrictions on reselling are necessary for executing both efficient and inefficient price discrimination strategies. As a consequence, the Authority considers that 'use-it-or-lose-it' type clauses should be permitted where they result in efficient outcomes and are in consumers long-term interests.

Moreover, restrictions on resale are typically most valuable to the generator when the expected price of the electricity, in the event of the large load user cutting consumption, is greater than the contract price. This may imply that restrictions on resale are most likely where the contract price is consistent with inefficient price discrimination.

Meridian contends that the economic literature shows that the complexity of these arrangements is such that they cannot be determined by regulators and others which aren't party to the market processes which generate them. The Authority does not think it is appropriate to always rely on the current incentives of incumbent firms to do what is best for wider society. Market design and structure may require change to ensure commercial incentives promote the efficient operation of the electricity industry for the long-term benefit of consumers.

Issue raised by submitters

The Tiwai contract price was not below the opportunity cost.

Authority's response

The Authority's primary concern is with generators' ongoing incentives to enter inefficient contracts so as to maintain aggregate price - not whether the latest Tiwai contracts are necessarily efficient. The Tiwai contracts (and the offers made prior) provided a potential illustration of how price discrimination may, in some cases, not be in the long-term interests of consumers, though this determination is not critical to the Authority's interest to ensure future contracts of this nature are efficient and in the interests of consumers. Moreover, the Authority's interest is as much with the other offers made to NZAS as the terms in the final agreement - these offers speak to the incentives of the generators as much as the accepted contract.

Having considered the submissions, the Authority agrees with many of the refinements suggested by submitters to take into account value components other than contract price when determining the value of the contact to the generator in order to fully appreciate whether a subsidy is present. The suggested refinements include features of the contract which impact the direct value of the arrangement to the generator, beyond the contract price, such as:

- node location
- load profile
- demand response provisions
- price separation provisions
- provisions pegging the contract price to an index
- the value of maintaining an uninterrupted commercial relationship

- counterparty risk
- financial inducements.

However, the Authority notes that while the generators party to the Tiwai contracts identified these features as having value, it is not clear whether they were formally ascribed any value during the negotiation of those contracts.

The Authority considers it would be necessary for the generators themselves to value these provisions if they consider they are relevant to assessing the efficiency of the resulting arrangements.

All this said, the Authority's observation on the efficiency of the Tiwai contracts remains unchanged – there is evidence that electricity may have been sold at below the opportunity cost in the event of NZAS exiting (which illustrates the potential for inefficiency). More importantly, the Authority considers that generators continue to have commercial incentives to subsidise the cost of electricity, when faced with the prospect of a very large load user contemplating exit from or entry into the domestic electricity market.

Issue raised by submitters

Incorrect methodology for estimating subsidy-free prices.

Authority's response

Meridian argues that the approach used by Concept Consulting to estimate the size of any subsidy that NZAS receives under the new Tiwai contract has no economic validity[26]:

Meridian argues the incremental system cost of supply is not a measure of the incremental cost of supply from Meridian's and Contact's hydro stations.

Meridian claims this test of a subsidy implies "that an efficient new entrant (generator) should not enter into a contract (with a load user) at a price below the cost of the highest existing supplier, which is approximated by thermal generation cost, as a lower price would be a subsidy."[27]

The incremental system cost of supply should not be confused with the contracting generator's avoidable cash-costs, with no regard for opportunity cost, as Meridian appears to be implying. Opportunity cost is a critical element of short run marginal cost – and is a fundamental underpinning of the hydro-based pricing system.

Inducing NZAS to stay through subsidised electricity will, if NZAS would otherwise have exited, have a cost to society in terms of the marginal cost of the higher cost thermal generation required to satisfy the very large increase in aggregate demand. Concept Consulting modelled the cost of the generation required to support (the highly inelastic) demand of aggregate load users with and without NZAS. This delta is the incremental cost of supply at the system level from NZAS's decision to stay.

[26] Page 7, Efficient price discrimination in the wholesale electricity market, Response to the Electricity Authority Market Monitoring Review, Kieran Murray and Vladimir Bulatovic, 22 December 2021.

[27] Page 7, Efficient price discrimination in the wholesale electricity market, Response to the Electricity Authority Market Monitoring Review, Kieran Murray and Vladimir Bulatovic, 22 December 2021.

Contrary to Meridian's claim, a contract price between a new generator and a load user at below the cost of the least efficient incumbent generator can be efficient and does not suggest a subsidy, using the Concept Consulting test. In this case, the new contract price is below the cost of the least efficient generator, but also aggregate supply increases and aggregate demand is unchanged (in the Tiwai case, aggregate supply is unchanged, and aggregate demand is increased significantly). The new generating asset will result in a more efficient national generating function, the less efficient incumbent generator will be displaced, thereby reducing expected costs to consumers.

Issue raised by submitters

The Authority made incorrect inferences about NZAS's upper bound willingness to pay, which was nothing more than "cheap talk'.

Authority's response

Meridian argues that Rio Tinto's 9 July 2020 announcement that it intended to exit should be viewed in the context of a major negotiation and treated as 'cheap talk'. Meridian argues the Authority was incorrect to treat the offer tabled as an indication of the upper bound of NZAS's willingness to pay at that time, and instead of focusing on cheap talk the Authority should instead have considered 'actions'. Meridian notes that giving notice is often part of a negotiating ploy, and not the 'definitive end' of the relationship, which was borne out by NZAS entering a new four-year contract.[28]

The Authority did not suggest that Rio Tinto's announcement was a definitive end to the relationship. There was always the possibility that NZAS would renew a contract if a lower contract price was offered than had been indicated previously, and/or the financial outlook for Aluminium improved during any subsequent negotiation period. Both these things transpired in the period between Rio Tinto's termination announcement and Meridian tabling a new offer in December 2020. A new contract was able to be agreed.

Meridian's contention that Rio Tinto's 9 July 2020 announcement to the ASX was 'cheap talk', and not an accurate statement of fact, is at risk of suggesting that Rio Tinto was in breach of Australian law and ASIC regulation, which require announcements to the ASX to be clear, accurate and complete and not to be false, misleading or deceptive.[29] The Authority emphasises that it does not have any evidence or reason to suspect that Rio Tinto's announcement of 9 July 2020 was anything other than clear, accurate and complete.

The Authority considers it reasonable to rely on Rio Tinto's statement on 9 July 2020 to infer NZAS's willingness-to-pay at the time. This position appears to be consistent with the one attributed to Meridian Energy chief executive Neal Barclay on 10 July 2020:

Barclay said that if Rio Tinto's statement about closing the NZAS was a negotiating tactic that would be "a pretty cynical play in terms of their own employees and the community in Southland".

"I think they have decided they want to close the smelter," he said.[30]

Issue raised by submitters

Authority overstated benefit to consumers from Tiwai exit.

[28] Meridian's submission, CSA Report page 10

[29] ASX Rule 3.1, Guidance Note 8

[30] https://www.stuff.co.nz/business/122093799/meridian-boss-we-offered-smelter-compelling-deal

Authority's response

Some submitters argue that competitive forces would mean that consumers benefiting from a Tiwai exit would be short lived. Submitter's also question the speed with which other consumers, including households, would benefit from any reduction would flow through. For example, Meridian note that "this has been evident over the last 3 years as most residential electricity consumers have been insulated from the impact of relatively high wholesale prices. Most households are on fixed price contracts and retailers take a long-term view of pricing to shelter households from short term wholesale volatility, be it seasonal or driven by other events."[31]

The Authority agrees that competitive forces will ultimately result in prices tending toward the Levelised Cost of Entry (LCOE), but this adjustment could take years, if not decades, given the size of the demand shock and the speed at which new generation might reasonably come on line. The efficiency consequences and wealth transfers, which are both large, can be expected to endure to varying degrees over the entire adjustment period.

The Authority acknowledges that the majority of consumers are on fixed price contracts and over the remaining term of those contracts will be immunised from cost increases. However, we do not believe it is correct to assume that NZAS stay or exit decisions should be characterised as a 'short term wholesale volatility event'. The impact of these decisions on wholesale prices extends into the medium and longer term, and imply higher prices once consumers' current contracts roll-over.

Issue raised by submitters

Errors in Quantification of producer and consumer surplus.

Authority's response

Meridian quantify the efficiency cost/benefit using the Authority's assumptions but with proposed adjustments to reflect errors they believe exist in the Authority's estimate. They conclude that, "rather than an efficiency loss of $54 (sic) 32 million to $117 million as arrived at by the Authority (Electricity Authority, 2021 pg 27), the measure of the total efficiency gains from the Tiwai contracts (relative to exit scenario) is around $40 million to $120 million per annum, applying the Authority's assumptions correctly. The result is consistent with the expected outcome from output enhancing price discrimination."[33]

The Authority has reviewed Meridian's Quantification of the net efficiency benefit of the Tiwai contracts. The Authority rejects the changes recommended by Meridian**.**

In the case of the "lower bound" estimate, Meridian argue net annual efficiency benefits from Tiwai of $178M. The additional benefit Meridian attributed to this arrangement is due largely to four differences in the modelling used by the two agencies:

- Inclusion of 'gain in producer surplus on additional volumes'
- Derivation of 'producer surplus on stranded water '
- Treatment of 'transmission costs'
- Estimate of 'opportunity cost on sales to the NZAS'

In all four cases the Authority believes its modelling assumptions are more appropriate.

Gain in producer surplus on additional volumes

[31] Page 22, Meridian's submission

[32] Actual Authority lower bound estimate is $54 million p.a. cost.

[33] Page 14, Efficient price discrimination in the wholesale electricity market, Response to the Electricity Authority Market Monitoring Review, Kieran Murray and Vladimir Bulatovic, 22 December 2021.

Meridian argue that the Authority failed to include a source of producer surplus, which is coloured grey and labelled E in their *Figure 2 Change in producer and consumer surplus*[34]*.* This area corresponds to a rectangle with length equivalent to the quantity being supplied to NZAS (572 MW) and the height the difference between P^{stay} ($90/MWh) and P^{Exit} ($70/MWH), less the area of the Harberger triangle measuring the consumer welfare loss "because demand is 'crowded out' by the higher prices". Meridian estimate this efficiency benefit, net of the consumer loss in welfare, as $92M per annum (Lower bound) and $8M (upper bound).

The Authority rejects this analysis. Meridian's use of price discrimination means that the PStay price is not realised on the electricity sold to NZAS (QNZAS in Meridian's Figure 2). Meridian does not earn a surplus on this volume of electricity of $20/MWh (PStay - PExit) as Meridian's modelling suggests, but rather they earn a loss (-$35MW/h) by supplying at a contract price (PNeg) below the price they would have earned if they sold the electricity on the open market in the event of an exit (P^{Exit}).

The Authority agrees that it is appropriate to include the loss of consumer welfare, as measured by the Harberger triangle. This loss is estimated at $8M per annum, and was included in the Authority's original estimates.

Producer surplus on stranded water

Both models assume average stranded water equivalent to 140 MW annually over the course of the contract. In an exit scenario this water goes to waste. In a stay scenario the generator earns a return on this water through selling it to the large load user. This producer surplus is equal to:

$$\text{Producer Surplus} = (\text{Price}^{Neg} - \text{Price}^{MC}) \times \text{MWh}^{\text{Stranded water}}$$

The Authority's model used a PriceNeg equal to the rebated contract price Meridian earns on the new NZAS contract. Meridian used the price the Authority assumed would be the average national price for electricity if NZAS stayed ($90/MWh). The water in question is not being sold to the other consumers, but to NZAS at the contract price. Both Meridian and the Authority make the same assumptions for PriceMC ($8/MWh) and MWhStranded water (1,226,400 = 140MW * 24hours * 365 days).

The Authority remains of the view that the relevant price for determining the producer surplus on otherwise stranded water is the contract price Meridian earns on that water. This error in Meridian's calculation explains $67 million of the difference between the two agencies' estimate of the cost benefit.

Transmission costs

Meridian argue that "the Authority includes in its production cost estimates an allowance for the transmission charges (hence, the producer surplus from electricity generated using stranded water is reduced by an allowance for additional payment of transmission costs). However, in the exit scenario, the Authority makes no allowance for the approximately $57 million per annum paid by the NZAS for the cost of transmission, which if Transpower is to meet its revenue requirements, would be allocated to other transmission customers, in the exit scenario."[35]

[34] Page 11, Efficient price discrimination in the wholesale electricity market, Response to the Electricity Authority Market Monitoring Review, Kieran Murray and Vladimir Bulatovic, 22 December 2021.

[35] Page 14, Efficient price discrimination in the wholesale electricity market, Response to the Electricity Authority Market Monitoring Review, Kieran Murray and Vladimir Bulatovic, 22 December 2021.

The Authority reduced the producer surplus from using stranded water by $8/MWH to reflect "the South Island mean injection charges from Transpower and operating and maintenance cost"[36] from deploying otherwise stranded water to generate electricity. The Authority treated these costs items as avoidable costs, both to Meridian and the system. That is, if the otherwise stranded water was not used for generation then Meridian and the system would avoid these charges. The South Island Mean Injection (SIMI) charges of approximately $6.5M per annum may constitute a simple reallocation of a fixed charge between generators, in which case it was wrong to include this charge in the efficiency cost calculation.

Meridian is correct that in the event of an exit, the $57 million per annum transmission charges paid by NZAS would be paid by other transmission customers. However, it would be incorrect to include these charges in the efficiency calculation, as they are incurred under both stay and exit scenarios. The only difference is who incurs these charges, and as such has wealth transfer but not total welfare implications. The $57M should be taken account of in estimating the wealth transfers arising as a consequence of the arrangement ie, reduce the $850 million annual estimate by $57 million.

Opportunity cost on sales to the NZAS

Both Meridian and the Authority agree that the opportunity cost of selling to the NZAS is the difference between the contract price and the assumed price the electricity would sell for in the event of an exit of the NZAS. Meridian has assumed:

- a contract price of $35/MWh, which is not the same contract price assumed by the Authority due to the rebate on the headline price discussed elsewhere; and
- a price in the event of exit of $70/MWh, which was the Authority's assumption.

Meridian has estimated this cost on the entire 572 MW – being the maximum volume of electricity covered by the contract. However, the opportunity cost of supply should only be applied to that part of the electricity which could be exported in the event of NZAS withdrawing. Stranded water has an opportunity cost of zero. Adjusting for the assumed 140 MW of stranded water per annum, has the effect of reducing the opportunity cost of selling to the NZAS from $175M to $132M per annum (a difference of $43M in the Lower Bound case).

Moreover, the cost of sales to the NZAS are increased in the 'upper bound' case. In that scenario the 'offer stack' increases to the PStay price for all of QNZAS. This means the opportunity cost from supplying the NZAS in this case increases further by the spread between PStay and PExit ($20/MWh) for all water which can be exported (432 MW). An increase in the cost of supply the NZAS in the upper bound case of $75 million per annum.

The net effect is that Meridian's Lower Bound of the efficiency 'benefit' needs to be increased by $43M, while the Upper Bound needs to be reduced by $32M annually.

The Authority considers that the Tiwai contracts have the potential to be both inefficient and destroy welfare, despite an increase in production with NZAS staying.

Issue raised by submitters

The Tiwai contracts do not explain price increases.

[36] Page 26, Inefficient price discrimination in the wholesale electricity market – issues and options, Electricity Authority, October 2021.

Authority's response

Some submitters argued that NZAS's demand for a significant portion of New Zealand's electricity has been a feature of New Zealand's electricity market for decades.

However, looking forward, if NZAS's most recent decision to stay was dependent upon subsidised electricity, then it is appropriate to conclude that national prices will be higher than they would otherwise be for at least the duration of the current contract.

Issue raised by submitters

Authority did not take into account the wider benefits to New Zealand.

Authority's response

The Authority's statutory objective is to promote competition in, reliable supply by, and the efficient operation of, the electricity industry for the long-term benefit of consumers. Central government is best placed to determine whether retaining an industry is in the national interest, and both design and provide transparent support packages to retain them. If incentives to retain businesses were made in a transparent manner, then NZAS's threat of exit would be mitigated, and NZAS would not require subsidised electricity. Profit motivated generators generally do not face incentives which align with the national interest.

7. Regulatory Statement

Objectives of the proposed Code amendment

7.1. The objectives of the proposed Code amendment are to:

(a) Provide greater transparency and assurance to the Authority, participants and consumers whether very large contracts are efficient or not;

(b) Disincentivise inefficient price discrimination, including by providing for adequate remedies in the event of a contract being entered which is inefficient;

(c) Avoid introducing unnecessary barriers or slowing down legitimate contracts which are demonstrably efficient; and

(d) Respond in a timely manner - any intervention needs to be implemented in advance of any proposed new contracts being entered, which have the potential to raise concerns regarding inefficient price discrimination.

7.2. The Authority also considers it is important to take a targeted approach, where the proposed amendments should only apply to contracts that may result in inefficient price discrimination. Therefore, any intervention should only target very large contracts that relate to the physical consumption of electricity by the large load user. These contracts have the effect of increasing spot prices for generation and therefore have flow on effects for forward prices and ultimately the prices paid by other consumers, and the returns earned from generation. The Authority is of the opinion that of the current contractual arrangements in New Zealand electricity markets, only the Tiwai contracts are sufficiently large to raise concerns about inefficient price discrimination of the type being considered here. Given very few contracts are large enough to result in inefficient price discrimination, the Authority expects only a handful of contracts would be required to comply with the proposed amendments each decade. This reduces administrative and compliance costs to the Authority and participants, reduces the risk of unintended consequences and, ensures the proposed amendments do not impose unnecessary costs or slow processes for other contracts.

7.3. It is also important that the proposed amendments should not unnecessarily add to uncertainty facing investment in generation, create barriers to investment, or adversely affect risk premiums in contracts as a significant amount of investment is needed in coming years to transition to 100% renewables. The Authority may also provide the option for parties to engage with the Authority during negotiations to de-risk these types of contracts.

Evaluation Criteria

7.4. In the Issues Paper, the Authority proposed to evaluate policy options against efficiency, competition and reliability, and practicality, as shown below in Table 1.

7.5. There was a broad level of support amongst submitters for the evaluation criteria proposed in the Issues Paper. However, some submitters raised two primary concerns with the criteria:

7.6. Some submitters criticised the Authority for not applying the criteria to the policy options in the Issues Paper. However, the Authority did not intend to apply these criteria to the options in the Issues Paper. Rather, the intention of the Issues Paper was to get interested parties' views on whether these criteria were appropriate and complete.

7.7. Some submitters argued that the criteria were too specific and may not be applicable to other forms of price discrimination in the wholesale market, eg, pricing of OTC hedge contracts for independent retailers. Whilst these observations may have some merit, as discussed above, the Authority has not expanded the scope beyond inefficient price discrimination in the context of large contracts linked to physical consumption of electricity.

7.8. As a consequence, the Authority has decided to employ the evaluation criteria as set out in the Issues Paper and repeated in Table 1 below. The Authority considers these evaluation criteria are comprehensive and robust in targeting inefficient price discrimination of the type being addressed and the criteria aligns with the Authority's statutory objectives.

Table 1: Evaluation criteria

	Criterion	*Description*
Efficiency	Highest value use of electricity	Electricity is provided to consumers who value it most highly and value it more than the cost of production
	Transparency	Provides assurance (to public and Authority) that electricity is efficiently allocated
	Confidence	Minimises risk premiums
	Flexibility	Supports bespoke transactions that create value, including the allocation of risks to parties that are best able to bear them
	Addresses inefficient price discrimination	Addresses root cause of inefficiency and any competition concerns
Competition and reliability	Reduces potential for price mark-ups over cost	Reduces consequence of market power
	Incentives to invest in new generation	Supports price signals for efficient investment in generation and electrification
	Supports investment to maintain future reliability	Avoids additional uncertainty for investment during transition
Practicality	Within Authority mandate	Feasible policy actions to achieve outcomes consistent with Authority's legislative mandate
	Timely	Can be addressed before any further contract negotiations between generators and large consumers

	Benefits outweigh costs	Satisfies usual cost–benefit analysis required by section 39 of the Electricity Industry Act 2010, including implementation and compliance costs

Rationale underpinning proposed amendments

Criteria for determining the contracts the inefficient price discrimination Code amendment will apply to

7.9. The Authority considers the proposed amendments should target only contracts at risk of inefficient price discrimination, so as to not impose unnecessary regulation on participants and other forms of contracting. Specifically, the Authority's aim is to gain assurances as to the efficiency of those contracts with the potential to harm other consumers. Therefore, the intervention should only target contracts where:

- the contract relates to consumption of a quantum of electricity by the designated large load user; and
- the entry or exit of this quantum is sufficiently large to materially increase prices being faced by other consumers (ie, that are not party to the arrangement). For this purpose, the Authority is consulting on a threshold of net 150 MW.

Rationale for targeting contracts related to the physical consumption of electricity

7.10. The reason for targeting contracts that relate to the physical consumption of electricity is because these contracts can influence prices other consumers can expect to pay in future. The electricity in the contract represents a portion of a generator's supply which is no longer available to satisfy the demand of other consumers. The additional supply may be more expensive to generate, which can result in an upwards shift in prices paid by consumers not party to the contract. This situation can be contrasted with pure financial derivatives on the ASX where the pay out is unconditional on consumption and therefore does not result in shifts in market price – instead the pay out is simply a wealth transfer.

Rationale for targeting contracts over net 150 MW

7.11. For a contract to result in shifts in prices paid by other consumers, the quantity of electricity consumed must be large enough to necessitate an increase in the dispatch of less efficient and more costly forms of generation. The Authority is of the view that the appropriate threshold should be contracts providing load users with the potential to consume net 150MW or more. This threshold is higher than the second largest industrial user's consumption in New Zealand in 2019, which would mean that other extant industrial users are unlikely to be affected. However, the threshold is large enough to capture the renegotiation of Tiwai and other potential contracts for large demand.

7.12. We note in this regard that:

- NZAS's contract was large enough to shift market prices. The contract allows NZAS to consume up to a maximum of 572 MW and its load is twice the size of the load of all other industrial grid connected consumers combined. NZAS's announcement of its exit from the New Zealand market on 9 July 2020 caused average prices to fall by around 22% from $90/MWh to $70/MWh.
- In 2019, NZ Steel was the second largest load user in New Zealand. Its share of national load was 2.7% and it consumed around 1100 GWh.[37]

[37] the reason for using figures from 2019 is due to the disturbances caused by Covid during 2020 and 2021

- Contact Energy is aiming to secure over 300 MW of demand in the lower South Island.[38]
- Meridian Energy and Contact Energy are exploring the option of developing a hydrogen plant in the South Island. A report by McKinsey & Co commissioned by both generators outlined the economic benefits of a 600 MW green hydrogen plant.[39]
- There is the potential for new large PPAs, such as the procurement project led by the Major Electricity Users Group (MEUG) in 2020 for around 2,000 GWh of electricity to supply several major electricity users[40] or potential government PPAs underwriting new electrification projects.[41]

7.13. A significant amount of net new investment is needed in coming years to support the transition to 100% renewables, and PPAs are likely to play a key role in facilitating that investment. The Authority considers it would be inappropriate for the proposed amendments to apply to contracts which support the transition, to the extent that they result in improved supply of renewable generation, and do not lead to material increases in prices paid by other consumers.

7.14. The Authority is aware that PPAs signed with large load users, such as those envisaged above in (e), which underwrite new investment in generation should only be of interest to the extent the total consumption of the large load user exceeds the new generation. For example, where the large load user's consumption is met by a new generating asset, the generation available to supply the rest of New Zealand is unaffected. As such, the Authority is proposing that the proposed Code amendments apply to contracts above 150 MW less any MW consumed from the new generation asset built as a consequence of the contract.

7.15. This would ensure that the proposed Code amendment only applies to generation used to supply a large load user which would otherwise be used to supply the rest of New Zealand in the absence of the contract. For example, if a data centre consumes 300MW, of which 200MW is linked to a PPA to finance a new generating asset, then the load user is only consuming 100MW of existing generation. In this situation the contract would not be deemed to be above the proposed net 150MW threshold. This paper will refer to the 150 MW threshold less any MW consumed by the large load user from a new generation asset built a consequence of the contract as the 'net 150 MW threshold'.

7.16. The Authority also recognises that not all contracts over net 150 MW supplied by existing generation in New Zealand may be inefficient. However, the Authority considers it is proportionate to focus on contracts of this size given the potential for inefficient price discrimination and significant impacts on consumers. In focusing on such contracts, the Authority is mindful that the proposed amendments should unnecessary and disproportionate barriers or uncertainty.

7.17. The Authority considers a net 150MW threshold would achieve the following objectives:

- provide certainty that the proposed amendments would only apply to contracts at risk of inefficient price discrimination, ie, contracts related to the physical consumption of electricity that have the ability to shift market prices.
- avoid unnecessary administration and compliance costs.

[38] Contact Energy to supply flexible renewable electricity

[39] New Zealand (Aotearoa) could be world's first large-scale producer of green hydrogen (meridianenergy.co.nz)

[40] NZ biggest corporate PPA seeks up to 2,000GWh a year of new renewables | RenewEconomy

[41] page 72 Part B: Accelerating renewable electricity generation and infrastructure (mbie.govt.nz)

7.18. The Authority is interested in whether stakeholders consider the threshold should be defined by reference to the maximum MW that the contract relates to or the anticipated consumption over a period of time. MWh may be advantageous where there is potentially a significant difference between maximum consumption at a point in time and average consumption over a period of time. For example, the contract could be an off-take agreement with a solar generator where the maximum MW are a multiple of the average generating efficiency.

Applying the threshold across related contracts

7.19. The Authority is proposing that any Code change should include provisions to ensure the intent of the inefficient price discrimination Code changes are not undermined by contract structures, including:

a) a generator undertaking a number of concurrent contracts with a single load user, each below the threshold, though together they aggregate to more than net 150 MW;

b) concurrent contracts between a generator and a load user and their related companies, each contact being below the threshold, though together they aggregate to more than net 150 MW;

c) at least one contract between a generator and a load user and at least one contract involving a second generator where the contracts rely on each other or are otherwise interdependent.

7.20. Provisions covering the scenarios above would capture the most likely structures for avoiding the intent of a proposed Code amendment including capturing any supporting contracts akin to the CFD contract between Meridian and Contact for the supply of 100MW, as well as any other financial inducements (such as the 'transmission underwrites' offered by Mercury and Genesis as they are conditional on NZAS continuing to consume electricity in New Zealand through Meridian's contract to supply NZAS) (clause (c) above).

7.21. The Authority recognises that there are other possible ways generators could circumvent the intent of the Code changes. For example, in attracting multiple data centres to New Zealand each with a consumption below net 150 MW but aggregating to above the threshold. For this reason, we have included a provision to capture other arrangements that are substantially the same kind as those described above.

7.22. The Authority's proposal is that each individual generator involved in a related contract scenario would then be required to comply with the prohibition and disclosure requirements in respect of its own contract(s) only.

Interventions target the means of enabling inefficient price discrimination

7.23. The Authority considers that materially large contracts that relate to the physical consumption of electricity will only be inefficient when:

a) the net value of the contract to the generator is negative ie, when the value of the contract to the generator is below the generator's best alternative value; and

b) the contract restricts the counterparty from being able to reduce their consumption and re-sell the electricity they have forgone to a third party or, short of a wholesale restriction, subjects the load user to worse terms for than if the load user had consumed the relevant electricity itself.

7.24. Both conditions must hold to enable inefficient price discrimination. The contract is deemed efficient if the value of the contract to the generator exceeds the value of the generator's best alternative at the time the contract was negotiated. Where the contract value is below the best alternative value, permitting re-selling enables the large user to re-sell electricity to users who may value it more highly than them, thereby enabling an efficient allocation of electricity.

7.25. The Authority is therefore proposing that a generator be prohibited from giving effect to a materially large contract if both conditions at (a) and (b) are met, and consequently can give effect to a materially large contract if either condition are (a) or (b) is not met.

Rationale for focusing on whether the net value of the contract to the generator is positive

7.26. The Authority considers that the proposed amendment should focus on whether the overall value of the contract to the generator is positive. This is calculated as the value of the contract to the generator less the value of the generator's best alternative which must take into account the generator's reasonable expectations as to whether in the absence of the materially large contract the buyer would have exited completely, reduced consumption, not expanded, or not entered the domestic market and any direct value components that are reasonable relevant to the calculation.

7.27. The Authority favours this approach over alternative approaches which rely on measuring the load user's willingness to pay. As the upper bound of a load user's willingness to pay is only observable if they exit, it is problematic to determine the willingness to pay when a contract is signed. All that can be implied at that stage is that the upper bound of the load user's willingness to pay is above the contract price (but not necessarily the best alternative price).

7.28. The Authority's preferred approach at this time is to consider generators' incentives and ask why they would be willing to supply (or insure, in the case of a CFD) electricity (and potentially other resources such as financial inducements) below the value of the best alternative. If the value of the contract to the generator is less than the value of the generator's best alternative, it is reasonable to presume that the generator's decision to supply is motivated by rent seeking discussed in the problem definition. Our concern with this type of rent seeking is that it results in an inefficient allocation of electricity, large increases in prices paid by other consumers, and can result in further downstream inefficiencies (eg, incentives to electrify and invest in new generation).

Rationale for targeting contracts which restrict on-selling

7.29. The 'use-it-or-lose-it' clauses used in the Tiwai contracts meant Meridian could terminate the contract if NZAS's consumption of electricity fell below a threshold. Clauses like these are a source of inefficiency when the value of the contract to the generator is below the value of the generator's best alternative as the 'use-it-or-lose-it' clause prevents the electricity from being resold to higher value users. The Authority considers that generators have stronger incentives to use clauses that restrict on-selling to protect their financial interests when offering electricity below the best alternative price in the event of a large load user making a credible threat to consumption.

7.30. Some submissions raised concerns around the prohibition of 'use-it-or-lose-it' clauses which restrict on selling. These included the following, which we respond to below:

(a) ‘Such clauses may have legitimate commercial uses including that: they can be used to facilitate efficient price discrimination; can provide greater certainty over the physical load which allows generators to invest more confidently; and may align with the load user’s risk preferences. The Authority is open to the view that clauses that restrict on-selling may have legitimate commercial uses such as facilitating efficient price discrimination. Any restrictions on clauses that prevent the re-sale of electricity should be designed in a way that it does not unduly interfere with generators’ ability to enter efficient contracts. A Code amendment should enable use-it-or-lose-it clauses where the contract value is above the generator’s best alternative value.

(b) It may be unclear whether the absence of the ‘use-it-or-lose-it’ clause in the contract between Meridian Energy and NZAS would have prevented inefficient price discrimination, given transmission constraints would have limited the amount of physical electricity which could have been resold - The Authority believes that where the load user counterparty is able to resell, they would appropriately face similar challenges to generators in reselling across transmission constraints.

(c) There are potential risks around on-selling including that third parties may not be as credit worthy as the initial counterparty. The Authority is of the view that counterparty credit risk issues, in the event of the load user cutting consumption and reselling, is a matter of contract between the generator and the load user.

Q6. Do you agree with focusing on contracts related to the physical consumption of electricity?

Q7. Do you agree the threshold for a Materially Large Contract should be the equivalent of net 150MW?

Q8. Do you think the threshold should be set in MW or the equivalent MWh set over a 12 month period? eg, in the case of a net 150 MW the threshold could be defined as either:

- **net 150 MW**
- **net 1,314,000 MWh over any 12-month period**

Q9. Do you consider that the proposed provisions to ensure the intent of the Code changes are not undermined by contract structures are sufficient?

Q10. Do you agree with focusing on whether the net value to the contract to the generator is positive?

Q11. Do you agree with focusing on contracts which restrict on-selling?

Q12. Should the Authority consider other criteria to determine which contracts the proposed Code amendment should apply to?

Shortlisted options

7.31. The Authority identified a range of options in the Issues Paper (see Table 2).

Table 2: Options proposed in the Issues Paper

Possible policy responses
Option 1: status quo
Option 2: prohibit ‘use-it-or-lose-it’ clauses

Option 3: pre-approval of contracts by the Authority
Option 4: require public offering of all (or some percentage of) hedge contracts
Option 5: require large hedges to be traded publicly
Option 6: extend trading conduct provisions beyond the spot market to hedge markets
Option 7: non-discriminatory pricing rules
Option 8: hybrid of option 3 and option 7
Structural options

7.32. Having considered the submissions and further refined the problem definition and rationale set out in the previous section, the Authority was not satisfied that any of the options identified in the form described in the Issues Paper were appropriate solutions to the problem.

(a) The Authority does not consider the status quo (option 1) is desirable, as the incentives for inefficient price discrimination will remain and could have adverse outcomes for consumers and market confidence. Moreover, the current Code provides the Authority with limited ways to discover and address cases of inefficient price discrimination. However, the status quo is the counterfactual against which any intervention must be compared to see whether consumers would be net better off, so as to justify intervention.

(b) Use-it-or-lose-it clauses can have legitimate commercial applications and a prohibition on such clauses (option 2) may not be efficient, even if the intervention is targeted at a few very large contracts. From a policy perspective, it would be preferable to only prohibit these clauses where they enable situations which are suboptimal to the long-term interests of consumers – most notably where the generator is not able to demonstrate that the effective value of the contract to them is below the value of the best alternative taking into account any credible threat to consumption.

(c) The Authority acknowledges some of the concerns raised by submitters around a compulsory pre-approval process (option 3) including the potential for delays to commercial contracts. A voluntary clearance regime may have the advantage that the parties to the contract can weigh the cost-benefit of gaining pre-clearance against the risk of an ex-post judgement that they have breached the Code.

(d) The Authority has not considered options 4 to 8 and structural options any further as these policy responses were suggested as potential solutions if submissions provided evidence of broader price discrimination issues in the wholesale market. However, submissions did not provide sufficient evidence of broader price discrimination, and in the absence of evidence to support a problem, it would not be appropriate for the Authority to consider these policy changes any further.

(e) The Authority considers the costs of undergoing structural reform to address inefficient price discrimination are significant, and there are likely to be more targeted and lower cost options available. Inefficient price discrimination may highlight a problem which could lend weight to a need for structural reform and the Authority notes that structural options may be considered as part of the wider wholesale market competition review.

7.33. The Authority's proposed Code amendment is explained in the next section. The Authority sets out its preferred approach having considered refinements to the problem definition and the submissions on the merits of possible interventions. At this time, the Authority is of the view that at a Code amendment is required to prohibit very large contracts where they are inefficient and to provide the Authority with greater visibility of very large contracts that raise the potential for inefficient price discrimination and the rationale for their pricing and structure so as to monitor and enforce compliance with the new prohibition.

7.34. In addition, the Authority is consulting on a voluntary clearance process. Once a contract is cleared, the contract would be exempted from the prohibition. In some cases, the costs of undoing a materially large contract could be extremely high, and result in a risk premium standing in the way of otherwise good deals being done. A voluntary clearance regime has the potential to provide a relatively fast and low cost mechanism to mitigate this concern.

Proposed regulation of Materially Large Contracts

7.35. On the basis of the problem definition and the rationales discussed above, as to the criteria and conditions for inefficient contracts, the Authority currently favours prohibiting Materially Large Contracts - contracts that relate to physical consumption of a quantity of electricity that equals or exceeds net 150 MW - when one of the conditions for efficiency is not made out.

7.36. More specifically, the Authority is consulting on a proposed Code amendment which would:

(a) prohibit generators giving effect to Materially Large Contracts, unless:

(i) the contract allows the large load user (buyer) to on-sell any un-used electricity under the contract without the load user being subject to any worse terms than if it had consumed the relevant quantity itself, or

(ii) the net value of the MLC is a positive value– ie the value to the generator of the contract exceeds the value of the generator's best alternative. Any increase in the generator's revenues from other customers arising as a consequence of the MLC are expressly excluded from this calculation, or

(iii) the Authority has provided clearance of the MLC, with clearance to be provided if the Authority is satisfied that either condition at (i) or (ii) above is met.

(b) require generators to disclose all Materially Large Contracts and supporting information within 5 business days of entering the contract.

7.37. The supporting information to be disclosed within 5 business days would include the following but is not limited to:

(a) a copy of the MLC signed by the parties;

(b) a statement of the generator's reasons as to how the MLC is not in breach of the prohibition clause and supporting evidence

(c) any information or documents, including any financial modelling, that are in the possession, or under the control, of the generator that discuss or show the impact of the MLC on the generator's and its related companies' group-level EBITDAF or on the generator's and its related companies' broader financial performance and strength.

(d) where the generator elects to demonstrate compliance by showing that the net value of the MLC is positive—

(i) the generator's calculation of the value of the MLC to the generator and the value of the generator's best alternative, as well as specified supporting information, and

(ii) the generator's reasonable expectations as to whether the load user would have exited completely, reduced consumption, not expanded, or not entered the domestic market in the absence of the MLC.

(e) where the generator elects to demonstrate compliance by showing the contract allows the large load user to on-sell any un-used electricity under the contract at no worse terms, a statement of the load user's rights to on-sell any un-used quantities under the MLC and an explanation of the terms on which it can do so.

(f) all other information and documents that are in the possession, or under the control, of the generator and that are or may be material to an assessment of a generator's compliance.

7.38. Based on the supporting information provided, and/or further information requested, the Authority could undertake an assessment as to whether the Materially Large Contract was potentially in breach of the prohibition clause. To the extent the Authority considered it was potentially a breach, the Authority could then, in line with its usual process for investigating breaches of the Code, appoint an investigator and (depending on the investigator's report) refer the matter to the Rulings Panel.

7.39. The Rulings Panel would ultimately determine whether a breach had occurred and, in the event one had, would then be empowered (under section 54 of the Act) to make a range of remedial orders for a Code breach, including pecuniary penalties and the making of compliance orders, which could potentially include requiring the parties undo or exit the contract so as to bring themselves into compliance with the Code prohibition.

Voluntary clearance regime for Materially Large Contracts

7.40. The Authority is also consulting on a voluntary clearance regime to give generators the option of obtaining clearance of a draft contract prior to signing or a signed contract that is conditional on receiving clearance. Voluntary clearance would enable generators to de-risk Materially Large Contracts by demonstrating in advance of giving effect to the contract that the contract is not of a kind that would be prohibited. Contracts that had been provided with clearance would then be exempt from the general prohibition on materially large contracts and so the generator would have assurance that the contract would not later be found to be in breach of the prohibition. The voluntary nature of this approach overcomes objections some submitters made that compulsory clearance (or pre-approval) of contracts would result in delaying commercial arrangements and would have the Authority intervening inappropriately in contracts.

7.41. Under the proposed clearance regime, the Authority would be required to provide a clearance if it is satisfied that either the net value of the contract to the generator is positive or the materially large contract allows the buyer to on-sell any un-used MW quantities under the materially large contract without the buyer being subject to any worse terms than if it had consumed the relevant quantity itself. If the Authority was not satisfied that either of those conditions were made out, then the clearance application would be declined.

7.42. Generators would be required to disclose draft contracts and supporting information as described at paragraph 7.37 above when applying for clearance. The Authority could also request further information from the generator for the purpose of satisfying itself as to whether one of the necessary conditions for providing clearance is met.

7.43. The Authority would be required to make a decision on the application and notify the generator of the outcome of its application no later than 45 business days after the date on which the generator has provided the Authority with all required information (including any further information requested by the Authority for the purpose of making its decision), or such longer period as the Authority and the generator agree.

7.44. Where a clearance is provided in respect of a draft/not yet signed contract the parties would have 20 business days to sign the contact, or else the clearance would lapse. The generator would be required to disclose a signed copy of the contract to the Authority within 5 business days of the parties signing.

7.45. If material changes are made to a contract after the Authority has provided its clearance, the clearance will no longer apply. Material changes will be those that affect the basis on which the clearance was given. For example, if the clearance was provided on the basis of the load user's ability to on-sell unused consumption under no worse terms, any changes to the resale provisions would mean the clearance would no longer apply. Similarly, if the clearance was provided on the basis of the net value of the contract being a positive than any changes to the contract that affect this calculation, such as changes to the contract price, the clearance would no longer be effective. The Authority could also revoke a clearance if it was based on information provided by the generator that was false or misleading in a material particular.

7.46. In the event that a contract is declined clearance, nothing would stop the generator from resubmitting a new application for clearance. Alternatively, the Authority could, at is discretion, decide to reconsider its decision not to provide a clearance if the generator provides further information or reasons (which could include making changes to the materially large contract) to the Authority in support of its position no later than 10 business days after notification of the Authority's decision not to provide clearance, and the Authority considers that the further information or reasons may alter or affect its original decision. Parties to the contract would also have the ability to appeal the clearance decision to the Rulings Panel.

7.47. Generators would not be precluded from talking to the Authority about contractual negotiations independently to the voluntary clearance process. However, there would be no obligation for the Authority to engage with these discussions or provide an assessment. If the Authority provided any indication as to whether a draft contract was likely to be in breach of the prohibition clause, this would not provide assurance that a contract would not be found to be in breach of the prohibition once disclosed after signing.

7.48. The prohibition clause, disclosure requirements and voluntary clearance regime is the Authority's currently preferred approach to address the specific form of inefficient price discrimination highlighted by the Tiwai contracts. Prohibiting materially large contracts where they are sub-optimal will provide participants with greater assurance as to the efficiency of these arrangements. Disclosure will provide greater visibility of very large contracts and enable the prohibition to be effectively monitored and enforced, while the voluntary clearance regime would provide the option for generators to seek assurance that their contracts will not later be found in breach of the prohibition. The targeted nature of the intervention means it is relatively low cost and has a moderate risk of unintended consequences compared to alternatives.

Q13. Do you agree with a code amendment prohibiting MLCs unless generators can show that the overall value of the contract to the generator is positive, or the contract does not restrict on-selling to a third party?

Q14. Do you agree with requiring generators to disclose to the Authority all MLC contracts and supporting information within 5 working days of signing?

Q15. **Do you agree with the list of information to be disclosed which constitutes the supporting information? Is there other information you think the Authority should require from generators?**

Q16. **Is the current list of supporting information too extensive? Is it reasonable to assume the marginal cost of producing this information is low?**

Q17. **What challenges do you envisage for a generator demonstrating the net value of the contract is positive? What implications might these have on the Authority's enforcements and merits of the proposal? What alternatives does the Authority have to prevent inefficient price discrimination of the type being addressed here, given the potential for severe harm to the long-term interests of consumers?**

Q18. **Do you support the voluntary clearance regime?**

Q19. **Do the proposed timeframes for the Authority to arrive at a clearance decision offer a reasonable balance between the time necessary to make a good decision and timeliness for commercial decisions?**

Q20. **Does providing the parties to the contract with 20 days to sign the contract after obtaining clearance provide the parties with sufficient time to finalise the contract, yet not so long that the parties effectively have a free option to strike a deal if and when prevailing prices fall below the value of the best alternative?**

Q21. **Does requiring the generator to disclose a signed contract to the Authority within 5 business days seem reasonable?**

Regulation of very large contracts by the Authority and Commerce Commission as co-regulators

7.49. The Commerce Commission's role with respect to electricity is as a regulator charged with administering the Commerce Act 1986, (which prohibits arrangements substantially lessening competition and other restrictive trade practices), as well as other legislation such as the Fair Trading Act 1986. The Commerce Commission also has regulatory responsibilities in markets where there is little or no competition, and little or no likelihood of a substantial increase in competition including the electricity lines sector and the transmission network ie, Transpower. By contrast the Authority is an electricity sector only regulator and is concerned with promoting competition in, reliable supply by, and the efficient operation of, the electricity industry for the long-term benefit of consumers. Both agencies recognise each other's mandate and the possibility of some overlap with respect to issues relating to competition in the electricity market. Both parties are committed to respecting the co-regulatory nature of competition issues in the electricity market as well as ensuring processes are transparent and efficient for industry.

7.50. Previously both parties have considered the Tiwai contracts from their specific perspectives and may do so in the future for possible renegotiations of the Tiwai contracts and other very large electricity contracts or contracts involving multiple generators.

7.51. The Authority plans to develop its new Code processes in a manner which takes into consideration the Commerce Commission's authorisation and collaborative activity clearance process, with particular regard where there are concurrent or consecutive applications to both authorities.

Evaluation of preferred option against status quo

7.52. In this section, we evaluate the merits of the proposed Code amendment against the status quo using the evaluation criteria consulted on in the Issues Paper.

7.53. In proposing this Code amendment, the Authority also considered and evaluated a range of alternative means of achieving the objectives of the proposed amendment both as part of, and subsequent to, its Issues Paper. These alternatives were considered inferior relative to the proposed option (see paragraph 7.35 to 7.48 above and Table 3 below).

Table 3: Alternative means of achieving objectives considered

Alternative options	Reasons not favoured
Status quo + disclosure of Materially Large Contracts and supporting information within 5 business days of signing	The current Code does not expressly prohibit an inefficient contract of the type being considered in this paper so there is no recourse or remedy where inefficient price discrimination is discovered.
Compulsory clearance for Materially Large Contracts	While this approach would provide certainty for participants prior to entering any Materially Large Contract as to its legality, relative to a voluntary clearance approach this option may unnecessarily delay and impose costs on contracting where generators are confident Materially Large Contracts are not in breach of the proposed prohibition clause. The Authority considers it preferable to provide generators with the choice to seek certainty through a voluntary clearance process or otherwise to enter into the contract at their own risk.
Blanket prohibition of clauses that restrict on-selling in Materially Large Contracts	Given these clauses may have legitimate commercial uses and may be used to facilitate efficient price discrimination, it is preferable to only prohibit these clauses where they are inefficient and permit such clauses where they result in efficient outcomes for consumers.

7.54. Consistent with robust policy design principles, the preferred changes to the Code are considered against the status quo.

Status Quo

7.55. For a description of the Status Quo, see the section “Problems with the Existing Arrangements”.

Evaluation of proposed amendments for prohibition, disclosure and voluntary clearance of Materially Large Contracts

7.56. The proposed amendment, which would only apply to very large contracts, would likely affect only a few contracts per decade. Parties would retain flexibility over their contractual arrangements, provided the contract is not in breach of the prohibition clause (ie, the contract allows the large load user to on-sell any un-used electricity under the contract or the value to the generator of the contract exceeds the value of the generator’s best alternative or the Authority has cleared the contract).

7.57. Compared to the status quo, the proposed amendments would:

(a) make explicit through the prohibition clause what conceptually constitutes inefficient price discrimination. This transparency will enable generators to be mindful of the specific concerns the Authority has with some very large contracts.

(b) create disincentives for generators to enter contracts which involve inefficient price discrimination. There would be provisions in the Code which prohibit contracts that result in inefficient price discrimination. In the event of a potential breach the Authority could refer the matter to the Rulings Panel which, in the event of a finding of breach, could make a range of remedial orders, including pecuniary penalties and compliance orders requiring an industry participant that is found not to be complying with the Code to take any action that is necessary to restore it to a position of compliance, which could include undoing contracts that are in breach of the prohibition.

(c) create a positive obligation on generators to disclose materially large contracts and supporting information to ensure compliance with the prohibition. The Authority is of the opinion that the cost to the generators for providing this information are minimal given this information should be to hand.

(d) create a voluntary clearance regime, which would provide generators with a further option to manage their risk of potentially facing penalties for a breach of Code, as well as the costs of potentially undoing a contract which has been relied upon by itself and a third party. A clearance creates an exception from the general prohibition such that a generator could proceed to give effect to the contract without risk of being found in breach of the prohibition unless the conditions of the clearance are breached (eg, false information was provided, or the final contract differs to the cleared contract in a material way).

    (i) by adopting a voluntary clearance regime generators could decide whether they are comfortable signing a contract without clearance relative to the costs of the clearance process and the benefit of that clearance.

    (ii) it is the Authority's view that in some cases the costs of undoing a materially large contract could be extremely high, and result in a risk premium standing in the way of otherwise good deals being done. A voluntary clearance regime has the potential to provide a relatively fast and low cost mechanism to mitigate this concern.

7.58. In summary, the Authority considers the proposed amendment is preferable to the status quo for addressing the potential for inefficient price discrimination because it provides transparency over what constitutes a breach; penalises generators for entering such contracts; improves the Authority's awareness and access to information relating to contracts which have the potential to result in inefficiency; and includes a voluntary clearance option for generators to mitigate the risk of the Authority investigating a contract and any uncertainty over timeframes in the event of a breach.

7.59. The Authority's assessment of the preferred option against the status quo is reflected in the evaluation criteria in Table 4 below. On the basis of this evaluation of the preferred option relative to the status quo, the Authority is considering the Code change in appendix A.

Q22. Do you agree that the proposed amendment is preferable to the status quo?

Q23. Do you support the drafting of the proposed Code changes in appendix A?

Q24. Do you have any recommendations on how the drafting of the proposed Code changes could be improved? If so, how?

Table 4: evaluation of the preferred option relative to the status quo (counterfactual)[42]

	Criterion	*Description*	***Status quo***	***Preferred option*** *(Prohibition of certain MLCs + disclosure + voluntary clearance)*
Efficiency	Highest value use of electricity	Electricity is provided to consumers who value it most highly and value it more than the cost of production	Incentives and potential for inefficient price discrimination remain.	Increases likelihood of identifying problematic contracts and penalty regime to disincentivise. Voluntary clearance gives generators the opportunity to de-risk and reduce unintended consequences of "good" contract opportunities being forgone.
	Transparency	Provides assurance (to public and Authority) that electricity is efficiently allocated	Considerable uncertainty as to merits of contracts with relatively low contract prices	Disclosure + prohibition clauses provide transparency and assurance.
	Confidence	Minimises risk premiums	Generators influence major stay/go decisions which materially impacts future supply/demand conditions and pricing. Increases investment uncertainty for new entrants.	Less ability for generators to influence future prices. Prices are more reflective of underlying supply/demand conditions because of prohibition on very large inefficient contracts. Potential compliance orders and penalties for breach of prohibition clause may deter marginally efficient MLCs. Voluntary clearance also de-risks legitimate MLCs
	Flexibility	Supports bespoke transactions that create value, including the allocation of risks to parties that are best able to bear	Ultimate contractual flexibility but enduring rent seeking incentives can have adverse impacts for consumers not party to the MLC.	Prohibition only applies to MLCs of which there are likely to be very few each decade. Not unreasonable to require generators to justify the economics underlying the key terms and conditions of the contract in the absence of load user's ability to reduce consumption and on-sell without penalty under the contract. Worse case may obstruct marginally efficient MLCs. Voluntary clearance also de-risks legitimate MLCs and is unlikely to obstruct marginally efficient MLCs.
Competition	Addresses inefficient price discrimination	Addresses root cause of inefficiency and any competition concerns	Relies on competitive response in the form of new entry. This response could take decades given scale of MLCs and incur inefficiency losses and wealth transfers over this period.	Yes, intervention directly targets the limited situations where materially inefficient price discrimination, of the type raised by the Tiwai contracts, may occur.
	Reduces potential for price	Reduces consequence of market power	Enables generators which are parties to inefficient MLCs to influence future prices	Prevents generators from influencing future prices through entering inefficient MLCs, so as to realise wealth transfers from consumers, or increase risk premiums for new entry investment.

[42] colours indicate the extent the preferred options agree with the criterion. Red = strongly disagree that preferred option meets the criterion, light red = disagree that the preferred option meets the criterion, light green = agree the preferred option meets the criterion and green = strongly agree the preferred option meets the criterion.

	mark-ups over cost			
	Incentives to invest in new generation	Supports price signals for efficient investment in generation and electrification	Potential to inflate future price signals which could result in inefficient investment and under investment in electrification.	Yes, through prohibiting inefficient MLCs
	Supports investment to maintain future reliability	Avoids additional uncertainty for investment during transition	No additional uncertainty under the status quo	Prohibiting inefficient MLCs through a targeted intervention has the potential to reduce uncertainty. Notably, the proposed amendment does not apply to quantities of generation consumed from new generation built as a consequence of a contract. However, any change comes with some risk.
	Within Authority mandate	Feasible policy actions to achieve outcomes consistent with Authority's legislative mandate	Does not achieve outcomes consistent with the long-term interest of consumers	Intervention is consistent with the threshold requirements of section 32(1) of the Act and is expected to advance the long-term interests of consumers
Practicality	Timely	Can be addressed before any further contract negotiations between generators and large consumers	N/A	Yes
	Benefits outweigh costs	Satisfies usual cost–benefit analysis required by section 39 of the Electricity Industry Act 2010, including implementation and compliance costs	N/A	Yes, see evaluation of costs and benefits below.

The benefits of the proposed Code amendment are expected to outweigh the costs

7.60. The Authority has not attempted to formally quantify all costs and benefits of the proposed Code amendment given the uncertainty around some variables to which a quantitative assessment of the cost benefit would be particularly sensitive. For example, a quantitative assessment would be particularly sensitive to judgements like:

(a) the future frequency of materially large contracts;

(b) what percentage of these contracts have the potential to be inefficient, and the extent of the inefficiency costs; and

(c) how contracting behaviour with respect to materially large contracts might change as a consequence of the proposed Code amendment.

7.61. However, the Authority's assessment at this stage and subject to consultation is that the proposed Code change would be of a significant net benefit to consumers. Relative to the status quo:

(a) The benefits of avoiding instances of inefficient price discrimination of the scale the proposed Code amendment seeks to prohibit are significant, even if such contracts and risks are of a low probability. The costs to consumers includes both the efficiency loss and the wealth transfers from consumers to generators these arrangements enable.

(b) The potential risk that the proposed Code amendment would act as a barrier to legitimate commercial activity is likely to be small, and mitigated by a targeted intervention, robust and transparent processes and ultimately independent decision making by the Rulings Panel.

(c) The introduction of a voluntary clearance process would serve to further reduce barriers to entering large contracts, by providing generators with a relatively low cost means of de-risking these arrangements - providing assurance if the contract is cleared and thereby avoiding possible penalties or any costs of having to undo a contract if there was a breach.

(d) The additional costs of requiring generators to disclose contracts and supporting information are expected to be minimal as the requirements will apply to very few transactions each decade, and the information is of a type a prudent generator would reasonably be expected to produce to inform internal decision making with respect to such a large contract of this type.

(e) Compulsory disclosure requirements would facilitate discovery of contracts that are in breach of the prohibition, reduce the Authority's costs of collecting the relevant information, and ultimately support faster decision making thereby reducing uncertainty.

The economic efficiency and wealth transfer benefits of avoiding large scale inefficient price discrimination are significant, even where the incidence of these arrangements is low

7.62. Generators' incentives to offer subsidies to large load users is bounded by the additional revenues they earn from other customers, which can be in the hundreds of millions of dollars, and lead to MLCs which cause very large annual efficiency costs.

7.63. For example, the Authority estimated the annual wealth transfer from consumers to generators arising from the Tiwai contracts, which could have been avoided if these contracts in their current form were prohibited and as a consequence NZAS had exited, was as much as $850M per annum.[43] The Authority also estimated the associated annual efficiency cost from the Tiwai contracts was in the order of $57m to $117m.[44] This estimated efficiency cost did not account for potential downstream inefficiencies caused by higher prices than underlying supply and demand conditions imply. This includes potential slowing of electrification and over investment in new generation, and so the actual efficiency costs are likely to be even greater.

7.64. Future materially large contracts have the potential to be of a similar size to the current Tiwai contracts, including any future agreement with NZAS or a proposed hydrogen plant. As a consequence, the proposed Code amendment can be expected to be applied to a handful of very large contracts to provide assurance that these contracts are efficient and in the long-term interests of consumers.

7.65. As a consequence, the proposed Code amendment may mitigate potentially very significant efficiency losses and inappropriate wealth transfers.

The proposed Code amendment creates limited risk that efficient business contracts will be discouraged

7.66. The proposed Code amendment could theoretically deter legitimate contracts which promise additional benefits to the New Zealand economy.

7.67. Parties may be deterred from entering into an efficient contract because of uncertainty created by the proposed Code amendment and a perceived risk of the contract being found to be in breach of the provisions. However, the Authority considers this risk is mitigated by the voluntary clearance regime, which provides generators with a low cost way to de-risk the decision to enter a Materially Large Contract.

Prohibition of inefficient contracts that could otherwise bring broader societal benefits

7.68. Relative to the status quo, a prohibition on inefficient materially large contracts may mean that large load users who would have otherwise stayed in, or entered, the domestic market on the basis of receiving subsidised supply may no longer be incentivised to stay or enter. The Authority recognises that such decisions may have broader societal impacts, such as on jobs, the economy and the environment.

7.69. However, the Authority is of the opinion that subsidies by way of MLC between generators, with profit motivations, and large load users is not an appropriate vehicle for achieving regional economic development gaols. The subsidy is not transparent and may be motivated by rent seeking, not regional or national interest.

The additional compliance costs facing generators will be low

7.70. The Authority considers that additional costs of requiring generators to disclose contracts and the supporting information will be low. The provisions would likely only apply to a handful of transactions each decade. The information that would be required to be disclosed is information a prudent generator would generate to support their negotiating strategy and decision making for such large contracts.

[43] Page 24, https://www.ea.govt.nz/assets/dms-assets/29/Inefficient-Price-Discrimination-in-the-Wholesale-Electricity-Market-Issues-and-Options-Discussion-Paper.pdf

[44] Page iv, https://www.ea.govt.nz/assets/dms-assets/29/Inefficient-Price-Discrimination-in-the-Wholesale-Electricity-Market-Issues-and-Options-Discussion-Paper.pdf

7.71. The introduction of the prohibition clause increases the likelihood that generators' management will be called upon to answer questions from the Authority as part of its internal assessment process. It is assumed that to support this process the following would be required:

(a) 2 staff @ $200,000 per year for 2 month each = ~$70,000

(b) 1 Senior Manager @ $500,000 per year for 2 Month = ~$100,000

(c) Legal and consultancy support ~$200,000

7.72. If it is assumed that there is one contract every four years for review, then the expected annual cost is in the order of $100,000 (~$370,000 / 4).

The proposed Code amendment promises efficiencies for the Authority

7.73. Compulsory disclosure requirements will assist the Authority with discovering Materially Large Contracts that raise compliance issues, as well as speeding up and reducing costs, relative to relying on the section 46 powers in the Electricity Industry Act. The disclosure requirements promise to reduce administration costs.

7.74. If the Authority was undertaking a voluntary clearance application or the investigation of a possible breach of the Code, the cost per investigation is estimated at:

(a) 2 staff @$150,000 per annum for 2 months = $50,000

(b) 1 Senior Manager @$300,000 per annum for 1 Month = $25,000

(c) Legal and specialist consultancy services = $200,000

7.75. This suggests the average annual cost could be in the order of ~$70,000 per annum if the analysis required to assess whether a contract is efficient is also assumed to occur every four years The average annual cost is in the order of ~$70,000 per annum.

7.76. In any event, even if these estimated costs set out above were in fact multiples, they are very small relative to any potential efficiency and wealth consequences from an inefficient Materially Large Contract.

Q25. Do you agree with the Authority's assessment of the benefits and costs of the proposed amendment? If not, why not?

The proposed amendment complies with section 32(1) of the Act

7.77. The Authority's objective under section 15 of the Act is to promote competition in, reliable supply by, and efficient operation of, the electricity industry for the long-term benefit of consumers.

7.78. Section 32(1) of the Act provides that the Code may contain any provisions that are consistent with the Authority's objective and is necessary or desirable to promote one or all of the following:

(a) competition in the electricity industry	The proposed amendments reduce the consequences of market power and support price signals for efficient investment by preventing generators from influencing future prices through entering, modifying or extending MLCs that result in inefficient price discrimination. See Table 4 above.

(b) the reliable supply of electricity to consumers	The proposed amendments are targeted and designed in a way to reduce potential uncertainty which can be a barrier to investment. See Table 4 above.
(c) the efficient operation of the electricity industry	The proposed amendments prohibit generators entering contracts which result in inefficient price discrimination – this prevents inefficiencies materialising. See Table 4 above.
(d) the performance by the Authority of its functions	The Authority considers the proposed amendments would not materially affect the performance of the Authority's functions.

The Authority has had regard to the Code amendment principles

7.79. The Authority is required by its Consultation Charter to have regard to the following Code amendment principles, to the extent that the Authority considers that they are applicable. Table X shows how the Authority has had regard for the principles in developing its proposals.

Principle	Comment
1. Lawful	The proposal is lawful, and is consistent with the statutory objective (see Cost Benefit Analysis above) and with the empowering provisions of the Act.
2. Provides clearly identified efficiency gains or address market or regulatory failure	The efficiency gains are set out in the Cost Benefit Analysis and Evaluation of preferred option.
3. Net benefits are quantified	The Authority has evaluated the costs and benefits and is of the view that there is a net benefit from the Authority's proposals.
	Principles 4 to 9 apply only if it is unclear which option is best or if the cost-benefit analysis is inconclusive that a Code amendment would yield net benefits (refer clause 2.5 of the Consultation Charter). The Authority considers the proposed Code amendment is clearly superior to the alternatives and the status quo counterfactual and so has not applied principles 4 – 9.

7.80. The Authority also notes that the Electricity Industry Amendment Bill is proposing to give the Authority the additional objective of protecting the interests of domestic consumers and small business consumers in relation to the supply of electricity to those consumers. However, importantly, the additional objective will only apply to the Authority's activities in relation to the dealings of industry participants with domestic consumers and small business consumers. Therefore, this work on inefficient price discrimination is outside the scope of this new objective (should it be enacted) because the proposed Code amendment is in relation to the dealings between a generator and a large industrial user (not a domestic or small business consumer). In any event, the proposed new code is in the long-term interests of all consumers as per the Authority's existing objective.

8. Attachments

8.1. The following appendices are attached to this paper:

- Appendix A Proposed Code Amendment
- Appendix B Format for submissions

Appendix A Proposed Code Amendment

Proposed location of new Code amendment: Part 13, new subpart 7

13.267 Contents of this subpart

This subpart provides for—

(a) restrictions on giving effect to **materially large contracts**; and

(b) information disclosure requirements to support compliance with this subpart; and

(c) a clearance regime for **materially large contracts**.

13.268 Definition of materially large contract

(1) A **materially large contract** is—

(a) a contract that—

(i) is not entered into through a derivatives exchange; and

(ii) relates to the physical consumption of **electricity**; and

(iii) relates to a net quantity of **electricity** that equals or exceeds 150 **MW** consumed at a point in time; or

(b) two or more contracts that each satisfy paragraph (a)(i)–(ii) and when taken together satisfy paragraph (a)(iii) and meet one of the following descriptions:

(i) two or more contracts between a **generator** and a **buyer**; or

(ii) at least one contract between a **generator** and a **buyer** and at least one contract between that **generator** or its related company and that **buyer** or its related company; or

(iii) at least one contract between a **generator** and a **buyer** and at least one contract involving a second **generator** where the contracts rely on each other or are otherwise interdependent; or

(iv) any other arrangement that is substantially of the same kind as that described in any of subparagraphs (i)-(iii).

(2) For **materially large contracts** made up of two or more different **generators'** contracts, any reference to **materially large contract** in the following clauses must be read as only referring to an individual **generator's** contract(s) that forms part of a **materially large contract**, rather than as a reference to the multiple **generators'** contracts.

(3) Where a **materially large contract** allows for the possibility of varying quantities of **electricity** consumption at any one time, the maximum quantity of **electricity** consumption possible under the contract at any one time is to be used for the purpose of determining whether the **MW** threshold in subclause (1)(a)(iii) is met.

(4) For the purpose of subclause (1)(a)(iii), the net quantity of **electricity** is the total **MW** consumed at a point in time (calculated in accordance with subclause (3)) less any **MW** consumed from new generation built as a consequence of the contract.

(5) For the purpose of this subpart, related company has the meaning set out in section 2(3) of the Companies Act 1993.

13.269 Restriction on materially large contracts

(1) A **generator** must not give effect to a **materially large contract** unless—

(a) the net value of the **materially large contract** to the **generator** calculated in accordance with clause 13.270 is a positive value; or

(b) the **materially large contract** allows the **buyer** to on-sell any un-used **MW** quantities under the **materially large contract** without the **buyer** being subject to any worse terms than if it had consumed the relevant quantity itself; or

(c) the **Authority** has provided a clearance under clause 13.273 in respect of the **materially large contract** and that clearance remains effective and applicable.

(2) Nothing in this clause prevents a **generator** entering into a **materially large contract** that provides that it is conditional on the **Authority** providing a clearance under clause 13.273.

(3) This clause only applies to **materially large contracts** entered into, extended or modified on or after the date this clause came into force.

13.270 Calculation of net value of the materially large contract to the generator

(1) The net value of the **materially large contract** to the **generator** is the value of the contract to the **generator** less the value of the **generator's** best alternative.

(2) The calculation of the value of the **generator's** best alternative must take into account the **generator's** reasonable expectations as to whether in the absence of the **materially large contract** the **buyer** would have exited completely, reduced consumption, not expanded, or not entered the domestic market.

(3) The calculation of the value of the contract to the **generator** and the calculation of the value of the **generator's** best alternative must take into account any direct value components that are reasonably relevant to the calculation, which may include (without limitation)—

(a) contract price:

(b) prices for baseload futures contracts over the period covered by the **materially large contract** and, where a **materially large contract** covers a period in time not yet covered by base load futures contracts, the **generator's** reasonable expectations as to base forward prices over this period:

(c) node location:

(d) load profile differing from base load:

(e) demand response provisions:

(f) price separation provisions:

(g) contract price pegged to an index provision:

(h) value of maintaining an uninterrupted commercial relationship with the **buyer**:

(i) relative counterparty risk:

(j) any other financial inducements or benefits associated with the **materially large contract**.

(4) For the avoidance of doubt, indirect effects of the **materially large contract** on the **generator's** wider portfolio (for example, revenues from other customers) must not be taken into account when calculating the value of the contract to the **generator** and the value of the **generator's** best alternative.

(5) Each value component used under subclause (3) must be assigned a monetary value that reasonably equates to its value to the **generator**.

(6) Each assigned monetary value for a value component must be aggregated to derive the value of the contract to the **generator** and the value of the **generator's** best alternative (as applicable).

(7) The relevant point in time at which the **generator's** reasonable expectations at subclause (2) and any assumptions relied on under subclause (3) are to be assessed is the duration of the 30 **business days** immediately preceding the **generator** (as applicable)—

(i) entering into the **materially large contract**; or

(ii) seeking a clearance from the **Authority** for the **materially large contract**.

13.271 Disclosure of materially large contracts

(1) Except where clause 13.276 applies, a **generator** must provide the information specified in this clause to the **Authority** in the form and by the means specified by the **Authority** no later than 5 **business days** after—

(a) entering into a **materially large contract**:

(b) changing a **materially large contract's** price, volume, term or re-selling arrangements or any other provision of a **materially large contract** that may affect the calculation of the net value of the **materially large contract** to the **generator** if the **generator** is relying on clause 13.269(1)(a) to give effect to the **materially large contract**:

(c) changing a **materially large contract's** re-selling arrangements if the **generator** is relying on clause 13.269(1)(b) to give effect to the **materially large contract**.

(2) The information to be provided must consist of the following in relation to the **materially large contract**:

(a) a copy of the **materially large contract** signed by the **parties**; and

(b) a statement of the **generator's** reasons as to how the **materially large contract** satisfies either clause 13.269(1)(a) or clause 13.269(1)(b); and

(c) evidence to support the **generator's** reasons at paragraph (b); and

(d) any information or documents, including any financial modelling, that are in the possession, or under the control, of the **generator** that discuss or show the impact of the **materially large contract** on the **generator's** and its related companies' group-level earnings before interest, taxes, depreciation, amortisation and fair value adjustments or on the **generator's** and its related companies' broader financial performance and strength.

(3) Where a **generator** seeks to rely on clause 13.269(1)(a), the evidence under subclause (2)(c) must include—

(a) the **generator's** calculation of the net value of the **materially large contract** to the **generator** in accordance with clause 13.270, including—

(i) the **generator's** calculation of the value of the contract to the **generator** and the **generator's** best alternative in accordance with clause 13.270; and

(ii) the value component(s) taken into account by the **generator** when calculating the value of the contract to the **generator**; and

(iii) the value component(s) taken into account by the **generator** when calculating the **generator's** best alternative; and

(iv) the monetary value assigned to any value component taken into account by the **generator**; and

(v) a justification for the monetary value assigned to any value component, including any assumptions relied on and (if available) evidence to show whether those assumptions are consistent with similar assumptions being made elsewhere in the **generator's** business in the 30 **business days** immediately preceding the date the **generator** entered into the **materially large contract**; and

(i) the **generator's** reasonable expectations taken into account under clause 13.270(2) and an explanation of the basis for these expectations and (if available) evidence to support those expectations; and

(b) all other information and documents that are in the possession, or under the control, of the **generator** and that are or may be material to an assessment of a **generator's** compliance with clause 13.269(1)(a).

(4) Where a **generator** seeks to rely on clause 13.269(1)(b), the evidence under subclause (2)(c) must include—

(a) a statement of the **buyer**'s rights to on-sell any un-used **MW** quantities under the **materially large contract** and an explanation of the terms on which it can do so; and

(b) all other information and documents that are in the possession, or under the control, of the **generator** and that are or may be material to an assessment of a **generator's** compliance with clause 13.269(1)(b).

13.272 Application to the Authority for clearance of a materially large contract

(1) A **generator** may submit an application to the **Authority** for clearance of a **materially large contract** that—

(a) is expressed as conditional on the **Authority** providing a clearance under this subpart; or

(b) has not yet been signed by the **parties**.

(2) Where a **generator** has not provided the information specified at clause 13.271 in respect of the **materially large contract** the application must include all information specified in clause 13.271 that would otherwise be required to be provided by the **generator** after entering the **materially large contract**.

(3) The application must be submitted in the form and by the means specified by the **Authority**.

13.273 Authority may provide clearance for a materially large contract

(1) Where the **Authority** receives an application that complies with clause 13.272 the **Authority** shall either—

(a) provide a clearance by notice in writing in respect of the **materially large contract** if it is satisfied that either clause 13.269(1)(a) or 13.269(1)(b) is met, in which case the Authority must specify which clause it is satisfied in respect of; or

(b) decline by notice in writing to provide a clearance in respect of the **materially large contract** if it is not satisfied that either clause 13.269(1)(a) or 13.269(1)(b) is met, in which case the **Authority** must give the **generator** reasons for its decision.

(2) The **Authority** may use the information provided to it in the application and any other information the **Authority** considers relevant for the purposes of its decision, including any further information the Authority requests from the **generator**.

(3) The **Authority** must make a decision on the application and notify the **generator** of the outcome of its application no later than 45 **business days** after the date on which the **generator** has provided the **Authority** with all required information (including any further information requested by the **Authority** for the purpose of making its decision), or such longer period as the **Authority** and the **generator** agree.

(4) If the period specified in subclause (3) expires without the **Authority** having provided a clearance for the **materially large contract** and without having given a notice under subclause (1)(b), the **Authority** shall be deemed to have declined to give a clearance.

(5) The **Authority** may publish the outcome of the application.

(6) A clearance provided by the **Authority** under this clause does not apply to a **materially large contract** if—

(a) any changes are made to the price, volume, term, re-selling arrangements or any other provision of the **materially large contract** that may affect the calculation of the net value of the **materially large contract** to the **generator** and the **Authority** provided its clearance on the basis of clause 13.269(1)(a); or

(b) any changes are made to the **materially large contract's** re-selling arrangements and the **Authority** provided its clearance on the basis of clause 13.269(1)(b).

(7) Where the **Authority** provides a clearance in respect of a **materially large contract** not yet signed by the **parties**, the clearance will expire and be of no effect if the contract is not signed by the **parties** within 20 **business days** of the **Authority** providing the clearance.

(8) The **Authority** may revoke a clearance if it was based on information provided by the **generator** that was false or misleading in a material particular.

13.274 Reconsideration by Authority of clearance decision

(1) Where the **Authority** declines to provide a clearance, the **Authority** may, at is discretion, reconsider its decision if—

(a) the **generator** provides further information or reasons (which may include making changes to the **materially large contract**) to the **Authority** in support of its position no later than 10 **business days** after notification of the **Authority's** decision under clause 13.273; and

(b) the **Authority** considers that the further information or reasons may alter or affect the **Authority's** decision under clause 13.273.

(2) The **Authority** must make any decisions under this clause within such timeframes as it reasonably considers appropriate.

13.275 Right of appeal against clearance decision

(1) A party to a **materially large contract** may appeal to the **Rulings Panel** a decision by the **Authority** under clause 13.273 not to provide a clearance in respect of the **materially large contract**.

(2) Despite subclause (1) a party to a **materially large contract** may not appeal to the **Rulings Panel** where the reason for the decision not to provide clearance relates to a failure by the **generator** to provide required information.

(3) The appeal must be made to the **Rulings Panel** no later than 20 **business days** after the **Authority** notifies the **generator** of its decision under clause 13.273.

(4) The **Rulings Panel**, in determining an appeal, must either approve the decision of the **Authority** or direct the **Authority** to reconsider the decision in full or by reference to specified matters.

13.276 Disclosure of cleared materially large contract

(1) This clause applies to a **materially large contract** that has been provided with a clearance under clause 13.273 provided the clearance remains effective and applicable.

(2) Where this clause applies, a **generator** must provide to the **Authority** a copy of the **materially large contract** signed by the **parties** in the form and by the means specified by the **Authority** no later than 5 **business days** after entering into the **materially large contract**.

13.277 Requirement to provide complete and accurate information

(1) In addition to the requirements of clause 13.2, the **generator** must take all practicable steps to ensure that the information that the **generator** is required to provide under this subpart is complete and accurate as at the date it is required to be provided under this subpart.

(2) If the **generator** later becomes aware that any information provided under this subpart was not complete or accurate as at the date it was required to be provided under this subpart, it must as soon as practicable provide to **Authority** such further information as is necessary to make the information complete or accurate as at the date it was required to be provided under this subpart.

13.278 Authority must keep information confidential

The **Authority** must keep all information provided to it under this subpart confidential except to the extent that disclosure is required to enable the **Authority** to carry out its obligations and duties under the Electricity Industry Act 2010, the **Code** or the Electricity Industry (Enforcement) Regulations or is otherwise required by law.

13.279 Appointment of auditor

(1) The **Authority** may, in its discretion, carry out an audit as to whether a **generator** has complied with this subpart.

(2) If the **Authority** decides under subclause (1) that a **generator** should be subject to an audit—

(i) the **Authority** must require the **generator** to nominate an appropriate auditor; and

(ii) the **generator** must provide that nomination to the **Authority** within a reasonable timeframe.

(3) The **Authority** may appoint the auditor nominated by the **generator** or a different auditor, having regard to any factors it considers relevant in the circumstances, including—

(i) the expected quality of the audit:

(ii) the expected costs of the audit.

(4) If the **generator** fails to nominate an appropriate auditor within 20 **business days**, the **Authority** may appoint an auditor of its own choice.

13.280 Carrying out of audit

(1) A **generator** subject to an audit under clause 13.279 must, on request from the auditor, provide the auditor with such information as the auditor reasonably requires in order to carry out the audit.

(2) The **generator** must provide the information no later than 20 **business days** after receiving a request from the auditor for the information.

(3) The **generator** must ensure that the auditor provides the **Authority** with an audit report on the **generator**'s compliance with this subpart within the timeframe specified by the **Authority**.

(4) The audit report must include any other information the **Authority** may reasonably require.

(5) Before the audit report is provided to the **Authority**, any identified failure of the **generator** to comply with this subpart must be referred back to the **generator** for comment.

(6) The comments of the **generator** must be included in the audit report.

(7) The audit report must not contain any contract that the **generator** has provided to the auditor unless the contract meets the definition of a **materially large contract**.

13.281 Payment of costs relating to audits

(1) If an audit establishes, to the reasonable satisfaction of the **Authority**, that a **generator** may not have complied with this subpart (whether or not the **Authority** appoints an investigator to investigate the alleged breach), the **generator** must pay for the audit.

(2) If the **Authority** considers that the non-compliance of the **generator** is minor or there is any other reason in the Authority's view that means the **generator** should not pay the costs of the audit, the **Authority** may, in its discretion, determine the proportion of the costs of the audit that are to be paid by the **generator**, and those costs must be paid by the **generator** with any remaining proportion of costs paid by the **Authority**.

(3) If an audit establishes to the reasonable satisfaction of the **Authority** that the **generator** has complied with this subpart, the **generator** is not required to pay any of the auditor's costs and the **Authority** will pay the auditor's costs.

Relevant Part 1 Definitions (with proposed amendments underlined)

materially large contract, for the purposes of subpart 7 of Part 13, has the meaning given to it by clause 13.268

risk management contract, for the purposes of subpart 5 and subpart 7 of Part 13, means—

(a) a **contract for differences**; or

(b) a **fixed-price physical supply contract**; or

(c) an **options contract**; but

(d) does not include an **FTR**

contract for differences, for the purposes of subpart 5 and subpart 7 of Part 13, means a financial derivative contract—

(a) under which 1 or both **parties** makes or may make a payment to the other **party**; and

(b) in which the payment to be made depends on, or is derived from, the price of a specified **quantity** of **electricity** at a particular time; and

(c) that may provide a means for the risk to 1 or both **parties** of an increase or decrease in the price of **electricity** to be reduced or eliminated; and

(d) that either—

(i) relates to a quantity of **electricity** that equals or exceeds 0.25 **MW** of **electricity**; or

(ii) is entered into through a derivatives exchange, being a market in which **parties** trade standardised financial derivative contracts, and contracts containing the right to buy or sell standardised financial derivative contracts, with a central counterparty

fixed-price physical supply contract means a contract that provides for the physical supply of **electricity**, if—

(a) the **buyer** is reasonably expected to purchase 1 **MW** or more of **electricity** on average during the term of the contract (for the purposes of determining whether a contract meets this 1 **MW** threshold, the total purchases under the contract should be used despite clause 13.219(6)); and

(b) the contract allows the **buyer** to purchase either—

(i) variable amounts of **electricity** linked to actual consumption of **electricity** at a fixed price or prices; or

(ii) a fixed amount of **electricity** at a fixed price or prices; and

(c) excludes a contract for the physical supply of electricity, that is generated by an embedded generating station, directly to a consumer

options contract means a contract containing the right to buy or sell a financial derivative contract

party, for the purposes of subpart 5 and subpart 7 of Part 13, means either the **buyer** or **seller** under a **risk management contract** or both the **buyer** and **seller** under a **risk management contract**, as the case may be, and for the purposes of subpart 7 of Part 13, means either the **buyer** or **seller** under a contract or both the **buyer** and **seller** under a contract, as the case may be

seller, for the purposes of subpart 5 and subpart 7 of Part 13, means—

(a) in respect of a **contract for differences**, the **floating-price payer**; or

(b) in respect of a **fixed-price physical supply contract**, the party **selling** the **electricity**; or

(c) in respect of an **options contract**, either—

(i) the **party** receiving the **premium**; or

(ii) if there is no **premium** under the **options contract**, the **party** who agrees to be the **seller** for the purposes of subpart 5 and subpart X of Part 13; or

(iii) if neither **party** agrees to be the seller, the **party** whose name is the second alphabetically

(d) for the purposes of subpart 7 of Part 13, in respect of any other contract, the party who is not the **buyer**

buyer, for the purposes of subpart 5 and subpart 7 of Part 13, means—

(a) in respect of a **contract for differences**, the fixed-price payer, being the **party** obliged to make payments at a fixed price from time to time during the **term** of the contract; or

(b) in respect of a **fixed-price physical supply contract**, the purchaser of **electricity**; or

(c) in respect of an **options contract**, either—

(i) the **party** paying the **premium**; or

(ii) if there is no **premium**, the **party** who agrees to be the **buyer** for the purposes of subpart 5 or subpart 7 (as applicable) of Part 13; or

(iii) if neither **party** agrees to be the **buyer**, the **party** whose name is the first alphabetically; or

(d) for the purposes of subpart 7 of Part 13, in respect of any other contract, the **party** consuming the **electricity** that the contract relates to

premium, in relation to an **options contract**, means the dollar amount paid by the **buyer** of the **options contract** to the **seller**

Appendix B Format for submissions

Submitter	

Question	Comment
Q1. Are there plausible reasons for why major generators with no commercial contract with NZAS would be willing to subsidise them staying, other than because of the impact NZAS's exit would have on aggregate prices facing all generators?	
Q2. Do you agree that restrictions on reselling by large users are primarily of benefit to the generator where the expected overall value of the contract to the generator is less than the best alternative value in the absence of the contract, taking into account any credible threat to consumption by the load user?	
Q3. Do you agree with the problem definition? If not, why not?	
Q4. Do you agree that for the types of contracts the Authority is interested in ensuring the efficiency of (very large contracts which have the potential to shift market prices for other consumers), they will be inefficient if: a) the value of the contract to the generator is below the generator's best alternative value taking into account any credible threat to consumption and b) the large load user is not able to on-sell any consumption under the contract it forgoes and remain subject to the same terms as if it consumed the electricity itself?	
Q5. Do you agree with the principles: a) the relevant counterfactual against which to assess the value of the contract to the generator is the best alternative value taking into account any credible threat to consumption? b) direct value components of the contract including and in addition to the contract price should be recognised and taken into account when assessing the value of the contract to the generator, so long as the generator can value them in a transparent and credible manner? c) the value to the generator from increases in prices to other consumers as a consequence of the contract should be excluded from the assessments of the value of the contract to the generator? d) the assessment should be made at the time the offer was made (or extended or renegotiated by the generator) on the basis of information in the immediate lead up to the generator signing the offer or contract?	
Q6. Do you agree with focusing on contracts related to the physical consumption of electricity?	
Q7. Do you agree the threshold for a Materially Large Contract should be the equivalent of net 150MW?	
Q8. Do you think the threshold should be set in MW or the equivalent MWh set over a 12 month period? e.g. in the case of a net 150 MW the threshold could be defined as either: • net 150 MW • net 1,314,000 MWh over any 12-month period	

Q9.	Do you consider that the proposed provisions to ensure the intent of the Code changes are not undermined by contract structures are sufficient?	
Q10.	Do you agree with focusing on whether the net value to the contract to the generator is positive?	
Q11.	Do you agree with focusing on contracts which restrict on-selling?	
Q12.	Should the Authority consider other criteria to determine which contracts the proposed Code amendment should apply to?	
Q13.	Do you agree with a code amendment prohibiting MLCs unless generators can show that the overall value of the contract to the generator is positive, or the contract does not restrict on-selling to a third party?	
Q14.	Do you agree with requiring generators to disclose to the Authority all MLC contracts and supporting information within 5 working days of signing?	
Q15.	Do you agree with the list of information to be disclosed which constitutes the supporting information? Is there other information you think the Authority should require from generators? Is the current list of supporting information too extensive? Is it reasonable to assume the marginal cost of producing this information is low?	
Q16.	What challenges do you envisage for a generator demonstrating the net value of the contract is positive? What implications might these have on the Authority's enforcements and merits of the proposal? What alternatives does the Authority have to prevent inefficient price discrimination of the type being addressed here, given the potential for severe harm to the long-term interests of consumers?	
Q17.	In the event of a generator entering an MLC, under what circumstances would a generator choose to show the net value of the contract is positive instead of showing that the contract does not restrict on-selling?	
Q18.	Do you support the voluntary clearance regime?	
Q19.	Do the proposed timeframes for the Authority to arrive at a clearance decision offer a reasonable balance between the time necessary to make a good decision and timeliness for commercial decisions?	
Q20.	Does providing the parties to the contract with 20 days to sign the contract after obtaining clearance provide the parties with sufficient time to finalise the contract, yet not so long that the parties effectively have a free option to strike a deal if and when prevailing prices fall below the value of the best alternative?	
Q21.	Does requiring the generator to disclose a signed contract to the Authority within 5 business days seem reasonable?	
Q22.	Do you agree that the proposed amendment is preferable to the status quo?	
Q23.	Do you support the drafting of the proposed Code changes in appendix A?	
Q24.	Do you have any recommendations on how the drafting of the proposed Code changes could be improved? If so, how?	
Q25.	Do you agree with the Authority's assessment of the benefits and costs of the proposed amendment? If not, why not?	

Glossary of abbreviations and terms

Authority	Electricity Authority
Act	Electricity Industry Act 2010
ASX	Australian Securities Exchange Limited
Best alternative value	What the generator, acting rationally, could reasonably expect to earn over the duration of the contract, for the volume of electricity in the contract and other resources allocated to support the contract, in the absence of the contract and taking into account any credible threat to consumption
CFD	Contracts For Differences
Code	Electricity Industry Participation Code
Credible threat to consumption	Contracts which involve a 'credible threat to consumption' relate to a situation where a customer is likely to otherwise exit or not enter the market (i.e. not be attracted to locate domestically) or a customer who otherwise would reduce or not expand consumption
Distinctive value components	Distinctive value components are taken into account in the calculation of the value of the contract to the generator and the generator's best alternative where they are reasonably relevant. Distinctive value components may include but are not limited to: the contract price and any other relevant value features of the contract such as location, load profile, demand response and price separation provisions, clauses 'pegging' the electricity price to the trading conditions facing the large load user e.g. electricity price is linked to the price of aluminium, counterparty credit risk, value of maintaining an uninterrupted commercial relationship and any forms of financial support provided by the generator
Issues Paper	Inefficient Price Discrimination in the Wholesale Electricity Market – Issues and Options
MLC	Materially Large Contract - contracts (or combinations of contracts) relating to physical consumption of a quantity of electricity of net 150MW or more
Net 150 MW threshold	150 MW threshold less any MW consumed by the large load user from a new generation asset built a consequence of the contract
Net value of the MLC to the generator	The net value of the materially large contract to the generator is the value of the contract to the generator less the value of the generator's next best alternative.
NZAS	New Zealand Aluminium Smelter
OTC	Over The Counter Contract
PPA	Power Purchase Agreement

Rent seeking	A situation where an entity seeks to capture more wealth for themselves without adding to, and potentially destroying, wealth to society - by way of a sophisticated form of economic withholding. Generators effectively withhold supply to consumers by supplying electricity to a large load user that would otherwise have exited (or not entered the market) if they faced the true direct value of that electricity
Review Paper	Market Monitoring Review of Structure Conduct and Performance in the Wholesale Electricity Market - Information Paper
Tiwai contracts	Contracts between reservations made in the Review is that the price discrimination implicit in the 'Tiwai contracts' between Meridian Energy, Contact Energy and New Zealand Aluminium Smelters (NZAS)
UTS	Undesirable Trading Situation
Value of the contract to the generator	The value of the contract to the generator should take into account direct value components including the contract price and additional distinctive value components, both positive and negative.
Value of maintaining an uninterrupted commercial relationship	The value of the option to wait and during that period gain information which reduces the likelihood of making costly and irreversible decisions