

1 October 2019

Submissions  
Electricity Authority  
PO Box 10041  
Wellington 6143

**By email:** [submissions@ea.govt.nz](mailto:submissions@ea.govt.nz)

### **Consultation Paper – Transmission pricing review – New Zealand Steel submission**

1. Thank you for the opportunity to comment on the Electricity Authority's consultation paper, *2019 Issues Paper – Transmission pricing review*, released on 23 July 2019 (**2019 Issues Paper**).
2. This submission should be read in conjunction with the submission being provided by the Major Electricity Users Group.

### **SUMMARY**

3. New Zealand Steel has serious concerns about the methodology underpinning the Authority's revised Transmission Pricing Methodology (**TPM**) proposal. The Authority's proposal fails to meet the principles of good regulatory practice, as the proposal is not proportionate, fair or equitable in the way that it treats regulated parties, and is inconsistent with the Authority's statutory objective.
4. Specifically, NZ Steel is concerned that:
  - (a) The Authority's residual charge is disproportionately large and the methodology for gross anytime maximum demand (**AMD**) as the allocator is arbitrary and contrary to objective of efficiency. A demand-based allocator is more correctly applied against net load, not gross load, to take into account cogeneration arrangements such as NZ Steel's cogeneration at Glenbrook (which is intertwined with and fuelled by off-gases and waste heat from the iron making process).
  - (b) The proposed AMD allocators for the benefits-based charge and the residual charge are applied on an inconsistent basis. For direct connect consumers, AMD would apply. For consumers connected through distribution networks, the benefits of demand diversity would apply.

- (c) The impact of the proposals would be to shift the burden of cost recovery to different users, which compromises the achievement of the Authority's efficiency objective. Such redistribution lacks credible economic support. It ignores the risk of significant damage to dynamic efficiency from moving to imperfect and largely arbitrary rules for allocating transmission costs to customers.
  - (d) The Authority's proposal fails to take into account the critical importance of peak pricing in the TPM. Removing the peak pricing signal will result in reduced demand response, and could result in peak load increases and therefore over-investment. Transpower has clearly set out the importance of peak pricing in its report on the role of peak pricing for transmission, stating that it considers that "an affordable and just transition to a low-emissions economy is promoted by retention of peak pricing in the TPM".<sup>1</sup> Relying on nodal pricing signals alone will not be sufficient to efficiently influence grid use at peak times.
  - (e) NZ Steel has responded in an appropriate, efficient and responsible way to the incentives it has previously faced in the market. The Authority's proposal fails to recognise that the costs for the transmission system imposed by an individual user's AMD will depend on the extent to which this coincides with the peak loads of other users. To the extent that the capacity of the transmission system is effectively determined to meet peak load, consumers that structure their demands to peak during off-peak periods are reducing their impact on transmission system costs. As such, the Authority's proposal would penalise efficient past actions which have efficiently deferred the need for grid investment, and encourage unnecessary and inefficient grid upgrades in the future. In addition, even though the Authority's proposed AMD-based calculations are backward-looking, they will nevertheless have forward-looking efficiency implications because of their impact on the consequences of past efficient actions.
  - (f) The proposed benefits-based charge is complex and uncertain, and there is a lack of economic support for applying beneficiaries-pay charges to existing assets.
  - (g) The proposed cap on transmission charges does not go far enough to remedy the deficiencies relating to the residual and benefits-based charges, and will not stop price shocks. In addition, as the cap is only temporary, it will not be able to offset the severe damage that the Authority's proposal will cause to dynamic efficiency.
5. The Authority's process also creates considerable regulatory uncertainty. It has been over seven years since the Authority commenced the current review of the TPM, which has created significant expense and distraction to participants and still has not resulted in any acceptable outcome. The findings of the Electricity Price Review Panel, which have not yet been made public, have the potential to further change the TPM requirements.

---

<sup>1</sup> Transpower, *The role of peak pricing for transmission*, 2 November 2018, p. 5.

6. Rather than seeking to radically reform the TPM, the more pragmatic and durable approach would be to focus on improving the key issues identified with the current regime. This may be more efficiently achieved by Transpower undertaking an operational review of the current TPM.

## **INTRODUCTION TO NZ STEEL**

7. In this section, we provide an overview of the NZ Steel business, the electrical connection at Glenbrook, and dynamics of the electrical load. It is important to understand the uniqueness of NZ Steel's electrical setup and how this interacts with the transmission grid, as these factors underlie key issues raised in this submission.

### **The NZ Steel business**

8. NZ Steel began production in 1968 and major expansions completed in 1987 created an integrated steel mill. The company is located in Glenbrook, South Auckland on a site of approximately 560 hectares on the southern shores of the Manukau Harbour.
9. For over 50 years, NZ Steel has been producing high quality steel products from its Glenbrook facility utilising local resources, including ironsand, limestone, coal and energy.
10. NZ Steel makes a substantial contribution to the lives and wellbeing of New Zealanders. NZ Steel contributes \$600 million per annum to the New Zealand economy. It is also a significant employer in South Auckland, with more than 1,400 people employed directly in high-skilled, well-paid jobs.
11. In addition, NZ Steel's operations result in the indirect employment of a further 2,500 people. As a consequence, NZ Steel is a significant contributor to higher living standards for New Zealanders due to its broad contributions through manufacturing and employment. As an example, currently, 40-plus young Kiwis are in NZ Steel's apprentice and graduate programmes, with thousands participating in such programmes since the company's inception in the 1960s.

### **Uniqueness of NZ Steel's position in electricity market**

12. In addition to the main site at Glenbrook, NZ Steel has two other physical sites of significant size electrically. These are embedded in electricity distribution networks. At this stage, it is not known how the proposed new TPM will impact charges that distributors charge consumers who are connected to distribution networks. Site specific comments in this submission are therefore focused on Glenbrook.
13. From a national perspective, NZ Steel at Glenbrook is the second largest consumer of electrical energy. The plant operates continuously and the Glenbrook site is one of the few industrial load sites in the country that is directly connected to the transmission network.<sup>2</sup>
14. The point of supply at Glenbrook is said to be one of the most complex in the country. There are two grid exit points (**GXPs**). One solely accommodates NZ Steel load. The other provides

---

<sup>2</sup> Supply is via a 20km single tower 220kV dual circuit line from the main grid switching station at Drury. This line and terminating substation are classified and charged as connection assets (ie, the costs of Transpower assets from Drury to Glenbrook are met directly by the parties connected, namely NZ Steel and Counties Power).

for NZ Steel, BOC Gas, Alinta Energy generation, and Counties Power. A map and photo providing an overview of the site is set out in Appendix 1 to this submission.

15. On average, 60% of NZ Steel's electricity requirements come from the Alinta-owned cogeneration plant, which is part of the NZ Steel iron making facility. The cogeneration is principally fuelled from off-gases and waste heat from the iron making processes. The generation only exists because of the iron making facility and generation is directly related to how much molten iron is being produced. There are two cogeneration plants. The smaller connects direct into the plant. The larger unit connects directly to one of the Transpower Glenbrook substation's 33kV busbars.
16. NZ Steel can shift large amounts of its load between trading periods. It manages load carefully to minimise draw on the transmission system at times of high demand in the Upper North Island (UNI) region. This includes working with Alinta to schedule planned generator maintenance outside winter peaks.
17. The cogeneration at Glenbrook is the largest generation north of Huntly. In fact, the only other generation of significance in the UNI is the Top Energy geothermal plant. While we rarely have a net export, the Glenbrook plant contributes to voltage and frequency stabilisation, and maintains a high power factor.
18. Our iron plant melter load is offered into the reserves market. Typically, this is up to 70MW and contributes significantly to the stability of the grid during unexpected trips of large generation units or a Transpower line.
19. The above factors mean that NZ Steel does not benefit from the transmission grid to the extent that other participants do. As outlined further below, this is an important factor that must be taken into account by the Authority when considering the allocation of transmission charges, particularly given the Authority's focus on the beneficiaries-pay principle.

#### **Impact of Authority's proposal on NZ Steel**

20. The Authority's proposal will have a significant financial impact on NZ Steel. Based on the Authority's modelling, the estimated charges for NZ Steel would increase by \$9.5 million per annum without a cap,<sup>3</sup> and be \$3.5 million higher than they currently are with a temporary proposed cap in place.
21. To put this amount into perspective, the reported EBIT for NZ Steel for 2018/19 was \$87 million,<sup>4</sup> with only \$8 million of this recorded in the second half of the year. The previous five years had an average underlying EBIT of \$34 million. The impact of the Authority's proposed changes to the TPM is therefore a significant factor in the cost model when NZ Steel's parent company, BlueScope, is considering future international investment/re-investment options, and may impact the longer term sustainability of the business.

---

<sup>3</sup> Based on the proposal pre-cap being \$11.9 million and status quo being \$2.4 million, as set out in Table 12 of the 2019 Issues Paper.

<sup>4</sup> <https://www.bluescope.com/investors/financial-information/>. Note EBIT numbers have been converted from AUD to NZD at \$0.93 and are rounded.

22. The impact of the Authority's proposal on NZ Steel and on economic efficiency, particularly dynamic efficiency, will be felt in the short, medium and long term.
23. The first response of a firm when facing an increase in its costs will be to try to pass on that cost increase to its downstream customers. In this case, however, prices are linked to the international market and NZ Steel's downstream customers can purchase steel from China and South East Asia instead. The international market is extremely competitive, and the cost increase faced by NZ Steel will not affect its rivals in that market.
24. The economic literature relating to cost pass-through provides very few simple rules to help determine when a firm will pass on a cost increase to its customers. However, one clear rule provided by that literature is that there is very little scope for a firm operating in an extremely competitive market to pass on a cost increase that only affects that firm (rather than all firms in the industry).<sup>5</sup> That means that there will be very little scope for NZ Steel to pass on any increase in its transmission costs to customers. Those costs will have to be absorbed by the business.
25. In the medium term, as discussed further below, the very real threat of appropriation of rents by Transpower or the Authority will deter NZ Steel from making the ongoing investments needed to maintain its operations in New Zealand. This increased risk, along with the inability to pass on the cost increase to its downstream customers, could put NZ Steel's operations in New Zealand at risk.
26. In the longer term, other firms will be deterred from investing in industries that rely on electricity in New Zealand because of the fear that the Authority will simply change allocation rules to transfer wealth with a redistributive outcome that is, at best, divorced from and, at worst, at odds with an efficiency objective.

## **GOOD REGULATORY PRACTICE AND THE AUTHORITY'S OBJECTIVE**

### **Authority's TPM proposal fails to meet principles of good regulatory practice**

27. The principles of good regulatory practice include that regulatory systems have processes that produce predictable and consistent outcomes for regulated parties across time and place, and are proportionate, fair and equitable in the way that they treat regulated parties.<sup>6</sup> The Government's *Expectations for Good Regulatory Practice* notes that durable outcomes of real value to New Zealanders are more likely when a regulatory system meets such principles.
28. The Authority's TPM proposal fails to meet these fundamental principles of good regulatory practice. As detailed further below, the methodologies underpinning the residual and benefits-based charges are not proportionate, fair or equitable in the way that they treat regulated parties.

---

<sup>5</sup> RBB Economics, *Cost pass-through: theory, measurement, and potential policy implications. A report for the Office of Fair Trading*, February 2014 and RBB Economics and Cuatrecasas, Goncalves Pereira, *Study on the Passing-on of Overcharges*, Final Report to the European Commission, 2016.

<sup>6</sup> Government *Expectations for Good Regulatory Practice*, April 2017, p. 2.

29. For example, the Authority's proposal means that consumers that are directly connected to the grid may be treated differently to consumers connected to a distribution network, by having transmission charges allocated based on historic gross AMD (rather than after diversity maximum demand or **ADMD**). As acknowledged by the Authority on 9 September 2019 in response to our question relating to this issue:

*A potential disadvantage of using AMD as the residual allocator is that a load customer might (depending on how transmission charges are passed through in distribution charges) pay less if it were embedded than it might pay if it were grid-connected, as a result of the diversity issue ... This potential artificial advantage could distort load customers' decisions on location and connection.*

30. Similarly, as discussed further below, the proposed reallocation of costs of past grid investments is not fair or equitable, and would result in unpredictable and unanticipated outcomes for participants. NZ Steel has responded in an efficient way to the incentives provided by the current transmission pricing arrangements. It is not fair or equitable to penalise users such as NZ Steel who have taken efficient action in the past to shift load and efficiently deferred the need for additional investment to increase grid capacity.
31. The Authority's process also creates considerable regulatory uncertainty. It has been over seven years since the Authority's current review of the TPM commenced. Over that time, there have been multiple proposals put forward by the Authority. Participants have had to expend considerable time and resources to try to understand and digest the Authority's proposals. The consultation paper for the current proposal emphasises that this new proposal differs in significant ways from the Authority's earlier proposals. This highlights the complexity and uncertainty of the Authority's approach to the TPM review.

### **Outcomes of Electricity Price Review create further uncertainty**

32. The Authority has not referred to the findings of the Electricity Price Review Panel relating to the TPM in its 2019 Issues Paper. Although the final report has not yet been publicly released:
- (a) the Panel stated during the course of its review that the extent to which transmission or any other shared national infrastructure prices should vary between users or regions is best settled with clear guidance from elected governments; and
  - (b) the Options Paper released by the Panel in February 2019 recommended that the Government issue a government policy statement to the Electricity Authority setting out how it should prepare fresh guidelines for setting transmission prices.<sup>7</sup>
33. The release of the Authority's 2019 Issues Paper before the final report of the Electricity Price Review has been made public, or a government policy statement has been considered, creates regulatory uncertainty and is likely to create additional costs for participants in continuing to respond to varied proposals.

---

<sup>7</sup> Electricity Price Review, *Options Paper*, 18 February 2019, pp. 22-23.

34. NZ Steel's submission on the Electricity Price Review Options Paper (22 March 2019) submitted that the Authority's proposal would need to be a pragmatic and broadly accepted proposal, and that a GPS may be the best way forward if that did not occur. Our submission is that the Authority's proposal is very unlikely to be durable, and there is now a risk that a government policy statement will be introduced that will further extend the lengthy TPM review.

**Current proposal is inconsistent with the Authority's objective**

35. The objective of the Authority is to promote competition in, reliable supply by, and the efficient operation of, the electricity industry for the long-term benefit of consumers.
36. The focus of the Authority's TPM proposal is on the objective of promoting the efficient operation of the electricity industry for the long-term benefit of consumers. However, as detailed further below, the Authority's proposal is inconsistent with this objective. For example, the Authority's proposal will penalise efficient load shifting, and encourage unnecessary and inefficient grid upgrades. There is also no apparent logical basis for the Authority's inconsistent treatment of:
- (a) large consumers (who are directly connected to the grid), who will have charges allocated based on their AMD;
  - (b) other consumers, who are supplied through an electricity distribution business and are likely to have charges allocated based on ADMD rather than AMD.
37. The Authority's proposal has also failed to take into account the efficiency effects that could result from the wealth transfers under the proposal. The Authority's general position, as set out in its *Interpretation of the Authority's Statutory Objective* document, is that wealth transfers should be excluded when considering benefits to consumers, but must be taken into account when there are efficiency effects.<sup>8</sup>
38. In this case, the Authority's proposal appears to shift the burden of cost recovery towards certain users, including NZ Steel. The wealth transfers result from changes in the allocation rules from one imperfect system to another, and result from a clear policy of the Authority to rebalance transmission prices. In cases such as this, although it is not directly relevant to the Authority for the purpose of calculating or measuring consumer benefits, the significance of the burden imposed on industrial users is a clear sign that the Authority should be cautious in exercising discretion when making changes to allocation rules to recover common costs of a network, given the implications of the changes to commercial operations such as NZ Steel.
39. The Authority's proposal will result in NZ Steel bearing a significantly higher proportion of transmission costs than it currently does. Irrespective of the adverse efficiency effects implied by the proposals (as discussed further below), the proposal will result in an unjustified wealth transfer from NZ Steel's shareholders.

---

<sup>8</sup> As noted in Electricity Authority, *Interpretation of the Authority's statutory objective*, 14 February 2011, at [A.24] and [A.64].

40. More significantly, wealth transfers such as these can be expected to affect efficiency adversely (despite the Authority's claims that its proposals avoid this), and this must be factored into the Authority's decision-making process. The Authority's *Interpretation of the Authority's Statutory Objective* document notes that wealth transfers should be taken into account when evaluating proposals if they seriously undermine confidence in the pricing process or in the electricity industry more generally, and inhibit efficient entry and investment decisions. The importance of dynamic efficiency is also acknowledged in the 2019 Issues Paper, which observes that, where a trade-off between static and dynamic efficiency is required, "significant weight should be given to the promotion of dynamic efficiency".<sup>9</sup>
41. In this case, the Authority's proposal clearly does affect dynamic efficiency. NZ Steel has responded in an appropriate, efficient and responsible way to the incentives it faced in the market. On average, 60% of NZ Steel's electricity requirements come from the Alinta-owned cogeneration plant, which is part of NZ Steel's facilities. NZ Steel can shift load between trading periods and manages its load carefully to minimise draw on the transmission system at times of high demand. In other words, NZ Steel has responded efficiently to the incentives provided by the current transmission pricing arrangements. The Authority's proposal effectively seeks to appropriate those benefits, which is deeply inefficient.
42. The Authority's proposal presents a serious risk of harming dynamic efficiency in this market as a result of the redistributive effects of the Authority's policy proposals. This harm comes about because firms such as NZ Steel will be more reluctant to invest in improvement projects or new assets, if they have reason to think that the Authority will extract the value created as a result of those cost savings or investments through increased transmission charges. In his keynote address to the RBB Economics Conference in Australia in 2016, the Chairman of the ACCC expressed a similar concern in the context of the charges levied by a port operator on coal miners at the Port of Newcastle:<sup>10</sup>

*There is also a broader issue at stake here. The threat of appropriation of rents by a monopoly service provider in such a situation does not merely result in a pure transfer. Rather, the threat of such appropriation can limit future investment and innovation by the upstream firms. What miner would invest in reducing its extraction costs if it knew that the lower extraction costs could simply be met by higher port charges? More generally, what miner would invest in its mines knowing that the benefits of that investment could be appropriated by a monopoly somewhere else in the supply chain?*

43. NZ Steel has invested in ensuring that it can manage its load so as to minimise its transmission charges. This has reduced the need for new investment in the grid, which is of benefit to New Zealand as there otherwise would have been a greater need for grid investment (which would result in higher transmission costs). The Authority's proposal disincentivises NZ Steel and others from taking action that could reduce the need for more grid investment.

---

<sup>9</sup> 2019 Issues Paper, p. 188.

<sup>10</sup> Rod Sims, Chair of ACCC, [Keynote Address: RBB Economics Conference](#), 27 October 2016.

## **THE TPM FROM A BROADER PERSPECTIVE**

44. The 2019 Issues Paper does little to advance proposals for wholesale changes to the TPM. The Authority has put forward a further proposal that seemingly has minimal support and as such will not be durable (ie, affected parties will continue to press for change, given the inequitable and inefficient nature of the Authority's proposal). As noted above, there is now also a risk of further uncertainty as a result of a possible government policy statement relating to transmission pricing following the Electricity Price Review.
45. Before discussing specific issues with the Authority's proposal, it is useful to put the proposal into context by considering the wider landscape.

### **Role and place of the transmission grid**

46. The transmission grid is an essential element of transporting electrical energy from generation to distribution networks and direct connect consumers. In an ideal situation, generation and load would be located in close proximity to each other, but for various reasons this is not the situation in New Zealand. Much of this relates to the high percentage of generation being hydro and from other renewable sources, which is necessarily located remotely from load centres.
47. Consumers only want to connect to a distribution network (and the grid) because they have a better outcome than standalone options. Grouping together forms a kind of cooperative in that a better result comes from the differing electrical energy needs (diversity) of consumers. However, advancing technology is increasing the availability of viable alternatives to grid connection. This is particularly so for mass-market consumers.
48. Despite claims to the contrary, the TPM proposals continue past thinking of one-way energy flows. The future is more likely two-way energy flows, with micro-grids, interconnected through local distribution networks connecting to a backbone transmission grid. Such potential changes highlight the importance of ensuring that any changes to the TPM are durable and take into account the development of viable alternatives to grid connection.

### **Regulatory setting**

49. The current regulatory regime provides for the full economic costs of Transpower's services to be allocated and recovered. This guarantee of return itself results in inefficiency. This is particularly the case given it can be expected that technological advances will change the most efficient options for grid investment, but the guaranteed return will not necessarily incentivise Transpower to investigate the most efficient option.
50. Although the Authority's proposed guidelines require that the TPM must avoid creating inefficient incentives for a large consumer or generator to shift its point of connection, the regulatory regime is likely to increasingly force consumers to choose between the costs of remaining connected to the grid and the costs of standalone supply.

### **Authority has a limited role in transmission pricing**

51. The Authority's role in transmission pricing is limited to providing guidelines for Transpower to develop a pricing methodology that provides for Transpower to recover its maximum allowable revenue set by the Commerce Commission.
52. Although the Code provides for the Authority to review an approved TPM if it considers that there has been a material change in circumstances, the Authority is not required to radically reform or undertake a wholesale rewrite of the TPM if there has been a material change in circumstances.
53. The fact that the Authority's current review commenced in 2012 (over seven years ago), and there has still been little progress in reaching an acceptable position, highlights that wholesale reform at this time is not a durable or pragmatic approach.
54. Even if the Authority makes the changes that it is currently proposing, the lack of economic or industry support for the proposal means that the proposal is unlikely to be durable. The 2019 Issues Paper observes that durability issues will arise if people are increasingly charged for services that primarily benefit others, and that perceptions of unfairness can detract from the durability.<sup>11</sup> However, the Authority fails to acknowledge that its revised proposal will also result in inequitable allocation of transmission costs and perceptions of unfairness, which will also raise durability issues. The Authority's assertion that the current TPM is not durable is based on the statement that there "has been long-term and consistent pressure for the TPM to be reformed", which "creates significant costs in reviewing regulations and lobbying for and against change".<sup>12</sup> However, the inefficiency and unfairness of the Authority's current proposal means that there will continue to be pressure for the TPM to be reformed and the Authority's durability objective will not be met.
55. The fact that the current TPM has continued to operate while the Authority's lengthy review of the TPM has been ongoing indicates that the current TPM may be more durable than initially thought. This is especially so given there is limited discontent with the current methodology. For example, on the demand side, Pacific Aluminium is the main party claiming disadvantage from the current TPM. As Pacific Aluminium accounts for around 14% of the total New Zealand electricity usage and its usage is at least four times larger than the individual usage in the next group of large consumers, the uniqueness of Pacific Aluminium's situation could be addressed through the TPM review rather than trying to adopt a radically different, "one-size fits all" approach.

### **The fundamental challenge and Authority's proposal**

56. As noted in Covec's *Expert Review of Expert Reviews of Transmission Pricing Methodology Proposals*, devising a TPM is a difficult economic problem for which there is no perfect solution.<sup>13</sup> The issue is that transmission networks are capital intensive and characterised by economies of scale and scope, meaning that they display strong natural monopoly

---

<sup>11</sup> 2019 Issues Paper, pp. 6-7.

<sup>12</sup> 2019 Issues Paper, p. 7.

<sup>13</sup> Covec, *Expert Review of Expert Reviews of Transmission Pricing Methodology Proposals*, 23 February 2017.

characteristics. The implication of that from an economic perspective is that the price that maximises economic efficiency (short-run marginal cost) is unlikely to generate enough revenue to enable the network owner to recover their costs.

57. The Authority's proposal falls well short of the goal of allowing the network operator to charge an economically efficient price (short run marginal cost) to the users of the network and recovering the shortfall from users in a way that does not distort their decision making.
58. Although the Authority claims that its proposal achieves this objective, the Authority's proposal ignores the risk of significant damage to dynamic efficiency (as a result of firms such as NZ Steel being more reluctant to make investment or cost-cutting decisions due to the risk that the Authority will extract the value created as a result of those decisions through increased transmission charges). To comply with administrative law principles and meet the threshold of reasonableness, the Authority's decision must be rationally connected to the reason given for making it.<sup>14</sup> As was made clear in the case of *Watson v Chief Executive of Department of Corrections*, unreasonableness in an administrative law sense can include a case where a decision-maker had more than one option but the decision reached was unsupported by reasoned justification. It may also include where the decision was so disproportionate in its weighing of competing factors, that the outcome was unreasonable.<sup>15</sup>
59. Given the length of time that the Authority has spent unsuccessfully trying to reform the TPM, and the significant expense and distraction that the reform process creates for participants, the Authority should now adopt a more durable and pragmatic approach. We submit that the better approach would be to focus on improving the key issues identified with the current regime (eg, tweaking the Regional Coincident Peak Demand (**RCPD**) formulae given a different formula may be appropriate for different parts of the grid).<sup>16</sup>
60. The Code provides for Transpower to review and submit proposed variations to the TPM. In our view, in light of the above, an operational review by Transpower of the current TPM is likely to more efficiently achieve a result that is pragmatic and durable.

## **SPECIFIC CONCERNS WITH AUTHORITY'S PROPOSAL**

### **Residual charge methodology is arbitrary and contrary to objective of efficiency**

61. For the reasons set out in this section, the Authority's proposal to remove the RCPD charge and allocate the residual charge based on historical gross AMD is arbitrary and flawed.
62. Our concerns about the residual charge methodology are particularly significant given the "residual" charge will (at least initially) form the bulk of the charges that are proposed to replace the current RCPD and HVDC charges. That is, although the Authority's aim is to introduce a

---

<sup>14</sup> *Watson v Chief Executive of Department of Corrections* [2015] NZAR 1049 at [67].

<sup>15</sup> *Watson v Chief Executive of Department of Corrections* [2015] NZAR 1049 at [26].

<sup>16</sup> For example, one option that could be explored is amending the RCPD formulae so that the strength of the signal relates to the degree of capacity the grid can accommodate within regions, which may involve extending the number of regions beyond the existing four regions and in some cases increasing the 100 measurement periods. Such an approach would enable regions of the country that have no transmission constraints, or are unlikely to have constraints in the foreseeable future, to have reduced pricing signals over peak periods.

benefits-based approach to allocating transmission costs, the modelling indicates that the residual charge will form over 70% of the new charges when they are introduced. Even if the residual charge is expected to reduce over time, having such a large percentage of the total left to be allocated on the arbitrary basis of historic gross AMD basis highlights the failure of the Authority's proposal to appropriately allocate transmission costs.

*Anytime maximum demand allocator penalises efficient use*

63. Consumers connect to an electricity grid to access the pool of generation and supporting transmission/distribution assets – the benefits of which cannot generally be achieved from standalone on-site generation. Electricity grids are designed, built, and maintained to cater for peak demands. Peak loads are determined by the after-diversity load (ie, taking into account that the AMD for each ICP/consumer does not occur at the same time).
64. Allocation based on AMD is arbitrary and unduly penalises customers such as NZ Steel whose demands on the grid are proportionately lower over system peaks compared with other customers. Placing less demand on the grid during peak times extends the time before which further investment in the grid is required.
65. The AMD does not measure peak use of the grid or take into account individual load characteristics. For industrial customers like NZ Steel, the AMD occurs when there are no load constraints on the grid (ie, outside peak times), rather than during peak times such as a winter weekday evening. If NZ Steel had not adopted this approach to managing its load, there may have been a need for greater grid capacity and inefficient capacity increases.
66. The proposal will therefore be inconsistent with the Authority's statutory objective. In particular, adopting guidelines for a pricing methodology that penalises efficient load shifting and encourages unnecessary grid upgrades is contrary to the objective of promoting the efficient operation of the electricity industry for the long-term benefit of consumers. It is also contrary to the goal of facilitating "efficient investment in the electricity industry through providing incentives for the most efficient investments to occur at the most efficient time and in the most efficient place".<sup>17</sup> As discussed above, the wealth transfers under the Authority's proposal will adversely affect efficiency, particularly dynamic efficiency, given the Authority's proposal effectively seeks to appropriate the benefits of NZ Steel's efficient response to the current transmission pricing arrangements.
67. We are aware that using MWh as an allocator has also been suggested. However, like AMD, this is a crude instrument and takes no account of load factor or ADMD. It would mean that a low load factor consumer, running over system peak, would be heavily subsidised by other consumers.

---

<sup>17</sup> 2019 Issues Paper, p. 188.

*Allocation based on gross load is inappropriate*

68. Although the Authority has proposed using a net load approach for the benefits-based charge, it has proposed using a gross load approach for the residual charge. We disagree that the residual charge (if there is one) should be allocated based on gross demand.
69. Using a gross load allocator is inappropriate for a range of consumers, as it fails to take account of different user circumstances. For example, it fails to recognise the benefits of cogeneration such as that at NZ Steel where it is integrated into the production process. As outlined above, NZ Steel's cogeneration arrangement with Alinta is an efficient use of the off-gases and waste heat from the iron making process. It reduces NZ Steel's reliance on the grid, and delays or avoids the need for further investment in the grid. NZ Steel's incentives to schedule cogeneration maintenance outside peak times will be reduced if the RCPD charge is removed and replaced with the gross AMD allocator.
70. In the 2019 Issues Paper, the Authority states that its preferred option is that the residual should be allocated based on a gross load approach because "gross demand is a better proxy for customers' size (and so their willingness and ability to pay) than net demand" and "allocation of common costs based on this is consistent with what would occur in a workably competitive market".<sup>18</sup> We disagree, and consider that the Authority's claims lack economic support, because:
  - (a) Customer size is not a proxy for willingness to pay (or ability to pay). Willingness to pay is the maximum that a consumer would be prepared to pay for a product or service, and is related to their value for the service. It is not related to size as such.
  - (b) Using gross load rather than net load would penalise users such as NZ Steel for taking action in the past that resulted in less reliance on the grid and deferred the need for upgrades to the grid. It directly contradicts the beneficiaries-pay philosophy that apparently guides the Authority's proposal generally.
  - (c) Similarly, an allocation based on AMD would be inconsistent with a beneficiaries-pay approach since it would not appropriately reflect the burden imposed on the system by individual users' actions. Specifically, it fails to recognise that the costs for the transmission system imposed by an individual user's AMD will depend on the extent to which this coincides with the peak loads of other users. To the extent that the capacity of the transmission system is effectively determined to meet peak load, consumers that structure their highest demands to occur during off-peak periods are reducing their impact on transmission system costs. As such, the Authority's proposal would punish rather than reward efficient past actions.
  - (d) The Authority's discussion of workably competitive markets in Appendix D of the 2019 Issues Paper is not correct. The Authority claims that pricing in a workably competitive market would lead to prices that reflect the benefit or value that consumers get from the product or service in that market. However, prices in a workably competitive market will

---

<sup>18</sup> 2019 Issues Paper, p. 154.

reflect costs, not customer value or benefit (although the price will reflect the value or benefit of the *marginal* customer in a workably competitive market). Prices in those markets may well be higher than the level that promotes static efficiency (namely, short-run marginal cost), but they will often be below the value that consumers place on the product or service. That value can be measured by the demand curve, and the difference between the demand curve and the equilibrium price in the market reflects the surplus available to consumers in that market.

71. The Authority has in part acknowledged the weakness of its proposed residual allocator, by including a provision in the draft guidelines that would enable Transpower to use another method if it would better meet the Authority's statutory objective. However, the default allocator will be based on historical gross demand, and the guidelines will therefore create a presumption in favour of that option.
72. NZ Steel urges the Authority to reconsider RCPD as a preferred allocation method. Whether this is best on a localised, regional, national, or mix-and-match basis, is a matter to be determined. While NZ Steel acknowledges that RCPD requires refinement, we submit that it is still a substantially better allocator than AMD or other methods identified in the 2019 Issues Paper.

*Application of demand-based allocator will result in inconsistent treatment of different consumers*

73. There is no principled basis for allocating transmission charges for direct connect consumers (ie, consumers who are directly connected to the Transpower grid) on a different basis to the way that transmission charges will be allocated for consumers connected to a distribution network.
74. Transpower customers include a few large consumers such as NZ Steel who are directly connected to the grid, as well as entities such as electricity distributors. Consumers of electricity are the ultimate user of energy (ie, at the ICP level), and include residential consumers as well as large consumers such as NZ Steel. The modelled proposal uses an AMD allocator applied at the Transpower customer level (ie, on the demand side to electricity distribution businesses and a handful of direct connect consumers). AMD is particularly punitive for direct connect customers, who (unlike consumers connected to a distribution network) have no ability to negotiate with an electricity distributor for recognition of the benefit given for diversity of demand.
75. Electricity distribution businesses will allocate transmission costs through a distribution pricing methodology. This is likely to be based on something other than absolute AMD of a consumer, and recognise that not all consumers connected to the distribution network will incur their individual AMDs at the time of the distribution system peaks (which forms the basis for the AMD for the distributor). That is, consumers connected to a distribution network have the benefit of 'group' buying where smoothed averaging occurs. No such allowance is proposed for our Glenbrook direct connect site, for which the site's AMD derived by the Authority has been

used in the Authority's modelling. As outlined above and in NZ Steel's previous submissions, NZ Steel's AMD at Glenbrook does not occur at a time of high UNI system loads.<sup>19</sup>

76. As has been pointed out in previous submissions, inconsistent application of AMD can be further illustrated by extrapolating the TPM proposal to a residential consumer. In the 2016 second issues paper, the allocator used for the mass market was "Nominal MVA". For residential consumers this was set at 20kW.<sup>20</sup> At that time, by applying the same logic as the Authority's modelling for NZ Steel's Glenbrook site, we calculated the transmission allocation for "Residual" to each residential ICP in the South Auckland area as \$1,063 per annum. Considering this is approximately half of what the average household pays now for their total electricity, clearly something is wrong. In reality, this would not be the case because application of the formula and the same input parameters would lead to an over-recovery of total revenue. However, it demonstrates the inappropriateness of a blanket application of AMD at the Transpower customer level, and the over allocation of costs that inevitably eventuates for direct connect and other identified consumers. An allocator exclusively based on gross capacity for the Transpower load customers is not appropriate. If gross AMD is to be used, it must be applied to all consumers (ie, down to ICP level within electricity distribution networks).
77. Consistent with our previous submissions, we urge a substantial refocus of the methodology on the end consumer. We think a number of the difficulties and risk in what is proposed could be avoided or mitigated with a shift away from the continued focus on the Transpower customer. The end consumer is the stated beneficiary of the law governing the TPM, and the end consumer's benefits and the incidence of costs should be a more prominent target and reference point.

### **Peak pricing is a critical component of TPM**

78. Removal of the RCPD price signal will result in reduced demand response and could result in peak load increases, requiring further investment.
79. As Transpower set out in its report on the role of peak pricing for transmission:<sup>21</sup>

*Peak pricing is a critical component of optimising the utilisation or capacity factor of transmission assets (flattening demand and enabling more energy to be supplied through the same assets), and so lowering per-unit transmission charges payable over-time. A TPM without peak pricing will materially heighten the prospect we invest in new transmission capacity earlier than we have to and in assets that become obsolete following mass uptake of new technologies.*

*We consider an affordable and just transition to a low-emissions economy is promoted by retention of peak pricing in the TPM...*

80. RCPD is on balance a more appropriate allocator compared with gross capacity or even gross throughput. The Authority has not established a sufficient reason for removing the RCPD

---

<sup>19</sup> See, for example, paragraph 15 of NZ Steel's submission on the second issues paper (17 May 2016) dated 26 July 2016.

<sup>20</sup> Electricity Authority, *Transmission Pricing Methodology Review: TPM options - working paper*, 16 June 2015.

<sup>21</sup> Transpower, *The role of peak pricing for transmission*, 2 November 2018, pp. 4-5.

charge. We acknowledge that there are some concerns about the current RCPD charge methodology, but consider that the Authority should assess refining the RCPD charge to address the concerns rather than removing the peak pricing signal altogether.

81. In our view, a strict application of the Authority's stated principles (ie, a service based, cost reflective and market orientated approach) points to retention of a substantial factor that reflects the investment importance of coincidental demand for all consumers. Including peak pricing as part of the TPM is also more proportionate, fair, and equitable than the Authority's proposal, and therefore more consistent with the principles of good regulatory practice.

### **Risks of relying on nodal pricing signals alone**

82. As one of New Zealand's largest electricity users, we know the impact that moving load can have on the UNI total. We caution against over reliance on nodal pricing as a means of managing system peaks.
83. Despite the Authority's apparent confidence in nodal pricing, NZ Steel does not agree that nodal pricing will be sufficient to efficiently influence grid use at peak times. As noted above, removal of the RCPD price signal will see reduced demand response and could result in peak load increases, requiring further investment. The risks of getting it wrong in the methodology are high because:
  - (a) On one hand, there is a risk of inefficient over-investment in the grid in relying on nodal pricing to signal peaks.
  - (b) On the other hand, there is a risk that nodal pricing will not signal an actual looming load increase in time to meet demand (ie, the capacity of the grid will not be sufficient to meet increased peak demand).
84. We understand that the Authority's cost/benefit modelling has assumed an increase in peak system load of 75MW. NZ Steel questions the accuracy of this number, given we estimate that the expected increase in NZ Steel's load alone at peak times if the peak pricing component of the transmission charge is removed would be 25-30MW on an 'average' day, and could well exceed the 75MW modelled for all New Zealand on a 'bad' day (subject to a very high spot price or other strong signal). It also appears that the Authority's table 7 in paragraph 4.68 of the Issues Paper refers to changes in demand based on average MW, whereas networks need to be built based on peak (not average) demand.
85. The Authority has proposed a transitional peak charge in recognition of the dangers of moving solely to rely on nodal pricing. However, the transitional peak charge is unlikely to be sufficient as it is limited in its application (to areas which "would experience congestion without a transitional peak charge") and proposed to be temporary/transitional only.
86. The guidelines should therefore continue to provide for a coincidental peak demand allocator.

### **Benefits-based charge is complex and uncertain**

87. As outlined in NZ Steel's previous submissions, NZ Steel agrees in principle with the economic rationale for a benefits-based charge.

88. However, the benefits-based charge creates significant complexity, and it is unclear how Transpower will undertake a calculation of private benefits and costs. Although there will be some investments that clearly benefit some users, it is difficult (and often not possible) to attribute specific investment to particular users. Any attempt to do so will introduce a new set of (often arbitrary) allocation rules that have the potential to harm dynamic efficiency in ways discussed above.
89. Although some investments will benefit some users more than others, the benefits cannot be precisely attributed (despite the level of precision implied in Schedule 1 of the Authority's proposed guidelines). In practice, a customer will "purchase" any service that provides it with some benefit and will pay a market price for that service. In the TPM context, theoretically, Transpower and its customers would determine what investments are needed, and then engage in a negotiation to pay for those investments which would be reflected in long-term contracts. That does not work in this case (because transactions costs are so high), so some other mechanism is needed to get the beneficiaries to "pay" for the investments that Transpower makes. However, the (regulatory) mechanism cannot possibly replicate what would happen if the market could have solved the problem, so any regulatory rule is, at best, a second-best solution relying on some arbitrary allocation rule.
90. A number of experts have raised concerns that beneficiaries will be unable to reliably estimate the way their charges will change in response to particular new investments, which undermines the potential for benefits-based charges to guide participants and consumers toward efficient conduct.<sup>22</sup> As the Authority itself acknowledges in the 2019 Issues Paper, uncertainty is not conducive to making long-term investment decisions.<sup>23</sup>
91. If a benefits-based charge is introduced, it will therefore be essential that the basis for allocation of benefits-based charges is transparent and predictable.
92. Transpower must also be required to take into account the fact that the benefit to a customer of being connected to the grid for back-up/insurance purposes (ie, customers who are less dependent on the grid) may be substantially less than the benefit for a customer who has normal load. We therefore agree in principle that taking a net load approach (ie, net of generation) is appropriate, as it better reflects the benefits that customers receive from grid-delivered electricity. However, for the reasons outlined above, we consider estimating the benefits based on AMD as an allocator is arbitrary and not necessarily reflective of the benefit derived.
93. Our other concern about the benefits-based charge is that it involves the reallocation of the costs of past grid investments, even though participants such as NZ Steel have had little opportunity to influence or contribute to investment decisions that they will now be asked to pay for. This is inconsistent with the need for regulatory systems to be proportionate, fair and equitable, and contrary to the principles of good regulatory practice. As the Authority

---

<sup>22</sup> Covec, *Expert Review of Expert Reviews of Transmission Pricing Methodology Proposals*, 23 February 2017, p. 13.

<sup>23</sup> 2019 Issues Paper, p. iv.

recognises in the 2019 Issues Paper, “[p]erceptions of unfairness can detract from the durability, associated certainty and so the efficiency of the TPM”.<sup>24</sup>

94. The problems with the Authority’s proposed inclusion of existing investments in the benefits-based charge have been canvassed in detail in previous expert reports submitted to the Authority. For example, Covec’s *Expert Review of Expert Reviews of Transmission Pricing Methodology Proposals* outlined expert views on the lack of economic logic for retrospectively applying beneficiaries-pay charges to existing assets, stating:<sup>25</sup>

*Retrospective changes to liability for the cost of existing assets sit uneasily with some of the economic logic behind a beneficiaries-pay approach. ...*

*The expert reports challenge the EA’s view that re-allocating liability for costs already incurred can lead to more efficient future investment decisions. PwC advocated “avoiding the retrospective reallocation of sunk costs”. Compass Lexecon said: “as long as these charges are applied to existing assets, the proposal fails to implement the minimum distortion principle for sunk cost recovery”. CEG said: “there can be no dynamic efficiency benefits associated with applying a ‘beneficiaries pay’ approach to reallocating the sunk costs of past investments”.*

95. Concerns with applying beneficiaries-pay charges in this way to existing assets have also previously been expressed by the Authority’s expert, Professor Hogan. The Authority’s *Beneficiaries-pay in the USA* report states that Professor Hogan did not approve of applying beneficiaries-pay to historic investments, saying that for historic investments “we are where we are” (which the report states was taken to be a reference to the fact that it is no longer possible to influence an investment decision that has already occurred).<sup>26</sup> In contrast, Professor Hogan is reported to have subsequently stated that “there was nothing that he was aware of that was inefficient or inappropriate in applying benefit-based charging to existing assets, provided no incentives for inefficient entry or exit are created”.<sup>27</sup>
96. Before the apparent retraction of Professor Hogan’s initial view on the application of beneficiaries-pay to historic investments, Professor Hogan had expressed a strong (and economically correct) view. The subsequent retraction or clarification is unsatisfactory, as it could be read as essentially saying that you can use any allocation rule to apply beneficiaries-pay to historic investments provided incentives for efficient entry or exit are not undermined. In other words, a rule that allocated historic investment costs to beneficiaries based on an arbitrary allocator (even one unrelated to the electricity industry) would be acceptable based on this view, provided it did not lead to inefficient entry or exit decisions.
97. The unusual approach that the Authority has taken in relation to the proposed benefits-based charge has also been recognised by the Electricity Price Review Panel, which has noted that

---

<sup>24</sup> 2019 Issues Paper, p. 7.

<sup>25</sup> Covec, *Expert Review of Expert Reviews of Transmission Pricing Methodology Proposals*, 23 February 2017, p. 11.

<sup>26</sup> Electricity Authority, Commerce Commission and Transpower, Joint Report: *Beneficiaries-pay in USA: Discussions on implementation of beneficiaries-pay cost allocation for transmission investment*, 20 June 2018, at [5.9].

<sup>27</sup> 2019 Issues Paper, p. v. See also 2019 Issues Paper at p. 117.

*“We are unaware of any other country undertaking retrospective reallocation of past grid investments”.*<sup>28</sup>

98. A more principled approach would be for the benefits-based charge to only apply to future grid investments (for which the costs are outweighed by benefits to consumers).

### **Proposed cap on transmission charges will not stop price shocks**

99. NZ Steel supports a cap on transmission charges. However, the Authority’s proposal does not go far enough to remedy the deficiencies relating to the residual and benefits-based charges discussed above.
100. The Authority’s concession that a cap is needed highlights the significant impact that the Authority’s proposal will have on consumers. The Authority has said that the cap will give households and businesses certainty about the level of charges in advance. However, if the cap only applies for a short initial period, the cap will only delay the inevitable price increases and will therefore not mitigate potential price shocks in future.
101. The Authority’s proposed cap also fails to take into account cogeneration, as the proposed capped increase is based on a customer’s total electricity bill. We submit that the cap should take into account cogeneration arrangements, such that the cap for customers who have cogeneration arrangements is lower in recognition of the benefits that cogeneration provides.
102. The Authority’s assumptions in its modelling include an assumption based on the cost of energy for the 12 months leading up to August 2018. Given recent prices have been significantly higher than for this period, the Authority’s modelling may therefore downplay the potential amount of increases to prices, resulting in a higher cap.

### **AUTHORITY’S QUESTIONS**

103. NZ Steel’s response to specific questions asked by the Authority in the consultation paper are set out in Appendix 2 to this submission.

### **INADEQUATE CONSULTATION PROCESS**

104. As set out in our letter to the Authority dated 13 September 2019, we are concerned that the Authority has not provided a reasonable opportunity for interested parties to consider and make submissions on the Authority’s proposal.
105. Although the Authority provided a period of 10 weeks for submissions, it did not hold workshops or release technical information relating to the proposal until late in the consultation period. This included holding a workshop on the details of the cost benefit analysis and charges modelling components of the proposal on 10 September 2019, just three weeks before the due date for submissions. Contrary to the Authority’s assertion in its response dated 20 September 2019 that it was not necessary for stakeholders to attend a workshop or consider the cost benefit technical files to be able to make an informed submission, we consider that the workshops and technical information are integral aspects of the consultation process.

---

<sup>28</sup> Electricity Price Review, *First Report*, 30 August 2018, p. 50.

106. Given the fundamental importance of ensuring that any changes to the TPM are durable and consistent with good regulatory practice, we expect the Authority to undertake a more thorough consultation process, which provides a better opportunity for participants to engage and discuss the proposal with the Authority, and more time to assess the potential implications of the proposal on affected parties and the long-term interest of consumers. We are disappointed that the Authority's response dismissed our concerns, and failed to acknowledge the time that it can take participants to understand and test complex proposals that have taken the Authority many months (if not years) to formulate.
107. We will continue to consider and assess the issues with the Authority's proposal. We expect that the Authority will have regard to any further submissions, which will enable it to make a more informed and robust decision on any proposed changes to the TPM.

### **CONCLUDING COMMENTS**

108. For the reasons set out in this submission, we urge the Authority to reconsider its proposal and to work further with participants to develop changes to the TPM that are more consistent with the Authority's objective and principles of good regulatory practice. Rather than seeking to radically reform the TPM, a more pragmatic and durable approach would be to focus on improving the key issues identified with the current regime.

Yours sincerely

A handwritten signature in black ink, appearing to read 'Gretta Stephens', written in a cursive style.

Gretta Stephens  
Chief Executive

## APPENDIX 1 – OVERVIEW OF GLENBROOK SITE





Multi-Hearth Furnace Cogen  
(connected to Iron Plant 11kV Board)

Kilns Cogen  
(connected to GLN0332 busbar at  
Glenbrook substation)

Transpower's Glenbrook Substation  
GLN0331 busbar  
- NZS only  
GLN0332 busbar  
- NZS  
- Kilns Cogen  
- BOC gases  
- Counties Power

## APPENDIX 2 – RESPONSE TO SPECIFIC QUESTIONS IN CONSULTATION PAPER

Question		NZ Steel response
1	Have the problems with the current TPM been correctly identified? In what ways does the current TPM work well?	The Authority has set out what it perceives to be problems with the current TPM. We do not agree. The current TPM is clearly understood and provides price signals for a dynamic environment. It discourages load regionally at peak times, thus reducing the need for further investment in peak generation, the transmission grid, and distribution networks. This is particularly important where load growth is occurring/expected.
2	What are your overall views on the Authority's proposal for changes to the TPM guidelines?	Our overall views on the Authority's proposal are set out in the body of our submission.
3	Does the CBA provide a reasonable estimate of the costs and benefits of the proposal? If not, what changes to the methodology and / or assumptions would improve the estimate?	No. Please refer to the MEUG submission and accompanying NZIER report.
4	Do you have any comments on the matters covered in chapter 4?	The 2019 Issues Paper makes repeated claims that consumers value electricity most highly during peak times. While this will be true for many consumers, it is not the case for all. NZ Steel is a 24 hour operation, but peak times are not when we have the highest requirement for grid supplied electricity.
11	Should the current guidelines on connection charges be largely retained or are changes required?	This has not been a focus of attention as broadly the current provisions are considered acceptable.
13	Do you think introducing a benefit-based charge for future grid investments will promote efficiency and the long-term benefit of consumers?	As set out in the body of our submission, NZ Steel agrees in principle with the economic rationale for a benefits-based charge.
14	Should the cost of pre-2019 investments be recovered in some other manner than through the residual charge, and if so how? Which pre-2019 investments should be recovered in this manner? In particular, do you consider that the cost of some past investments should be recovered through a benefit-based charge?	Please refer to the body of our submission (including paragraphs 88 to 98).

Question		NZ Steel response
18	Should the guidelines require Transpower to adopt a net load or a gross load approach in determining customer benefits, or should flexibility be allowed?	As set out in the body of our submission, net load should be used. Gross load is not relevant. Any benefits to consumers of an investment will come from net load.
19	Should the guidelines distinguish between high-value and low-value investments?	Yes. A pragmatic approach should be used, taking into account the size of the project and range of benefits. We suggest that consideration be given to whether the Commerce Commission approval process should include an assessment of how the charge will be allocated.
20	If so, should the costs of low-value investments be allocated via the residual charge or via the benefit-based charge using a simple method?	This cannot be answered until issues surrounding the proposed residual and benefits-based charges are addressed.
22	What are your views on the Authority's proposal to determine a benefit allocation for seven major existing investments (including the proposed and alternative methods)?	Please refer to the body of our submission (including paragraphs 88 to 98).
24	Should charges be revised if there has been a substantial and sustained change in grid use? If so, what threshold would be appropriate to define such an event?	<p>It is hard to imagine a durable TPM that does not have provision for such occurrences. Situations will also arise where the customer exits the market or disconnects from the grid. We have seen this in recent years with Auckland based generation.</p> <p>However, keeping Transpower whole with regard to revenue is the real issue. In a workably competitive market, the shareholder would take the loss, not have the revenue short-fall recovered from other customers.</p>
27	Should the guidelines provide for a single residual charge or multiple residual charges?	Please refer to the body of our submission (including paragraphs 61 to 62). The proposed residual charge would initially recover well over 50% of Transpower's total revenue. Further breakdown of this is essential and necessary to move forward to find appropriate allocators. Please also refer to the MEUG submission.
29	Should the residual charge be allocated based on AMD, annual consumption, a mixed approach, or some other approach?	As set out in the body of our submission (see paragraphs 63 to 77), neither of these allocators are appropriate. They are arbitrary and, given the size of the residual, would create significant inefficiencies.

Question		NZ Steel response
30	If the residual charge is to be allocated based on AMD, how should multiple points of connection be treated?	If the residual charge is to be allocated based on AMD (which we disagree with), multiple points of connection at a single Transpower point of supply (ie, a substation similar to Glenbrook) should be treated as a single connection point.
31	Should demand be measured using a net load or gross load approach for the allocation of the residual charge?	There is clear logic for using net load rather than gross load (see paragraphs 68 to 72). As set out in those paragraphs, the assertion in the 2019 Issues Paper that "...gross demand is a better proxy for customers' size (and so their willingness and ability to pay) than net demand" <sup>29</sup> is strongly refuted.
32	If a gross load approach is used for the residual charge, should injection by both distributed generation and behind-the-meter generation be taken into account, or distributed generation only?	As outlined in the body of the submission, we disagree that the residual charge (if there is one) should be allocated based on gross demand, including because the gross load approach fails to recognise the benefits of cogeneration. If a gross load approach is used for the residual charge, the answer to the Authority's question about whether injection by both distributed generation and behind-the-meter generation should be taken into account is not straightforward when NZ Steel's Glenbrook site is considered. For the reasons outlined in the body of our submission, cogeneration should be taken into account when determining load.
33	Is there any other available data that should be used to allocate the residual charge instead of data from the Reconciliation Manager?	NZ Steel is unable to answer this question at this time. In the time available, we have not been able to reconcile the inputs used in the Authority modelling with what we consider to be the actual figures.
35	Should a customer's residual charge allocation be adjusted to account for a substantial change to demand due to factors over which it has no control?	Yes, for the reasons and with the implications outlined in the answer to Question 24 above.
36	Should the residual charge apply to both generation and load customers, or only to load customers?	Please see the answer to Question 27 above.
37	Are the proposed provisions relating to adjustments appropriate?	The situations outlined should be expected to arise at some stage. In addition, the Auckland region is experiencing increased growth in ICPs. This will lead to increased investment in the grid.

<sup>29</sup> 2019 Issues Paper at [B.213].

Question		NZ Steel response
		It is necessary for the TPM to accommodate such situations in a dynamic way. We are not confident the current regulatory settings enable a workable and durable solution to be included in the TPM.
39	Should the TPM include a price cap? Does a price cap of 3.5% of total electricity bills provide a reasonable balance between the desirability of limiting price shocks and the desirability of transitioning to the new TPM?	Please see paragraphs 99 to 102 of this submission.
44	Should the guidelines include a peak charge? If so, should it be a core component of the proposal or an additional component?	Please see paragraphs 78 to 86 of this submission.
45	Should the peak charge be applied only where the grid would otherwise be congested?	A peak charge should be applied to signal potential congestion, not only when the congestion arises. An appropriate peak signal will encourage optimisation of asset use, avoiding/delaying the need for investment. Clear long-term pricing signals are required, given consumers make long-term investment decisions (often involving decades) and grid investments usually require a number of years to plan and build.
52	Do you agree with the conclusions of appendix D?	Please see paragraphs 22 to 43 and 56 to 60 of this submission.
53	Do you have any comments on the matters covered in this appendix D?	Please see paragraphs 22 to 43 and 56 to 60 of this submission.
54	Do you agree with the conclusions we draw from Transpower's report <i>The role of peak pricing for transmission</i> ?	No. Peak pricing is a critical factor to the operation of, and investment in, the grid. NZ Steel considers more weight should be placed on the Transpower recommendations. There is high risk in moving to a nodal pricing signal for congestion. When congestion does factor into the nodal prices, consumer investment decisions will have been made, and it will usually be too late to rely on demand-side management as an efficient tool to manage the congestion.
55	Do you agree that nodal prices enhanced by RTP, and supplemented if necessary with administrative demand control, are the most efficient means of constraining grid use to capacity?	The level of nodal prices will be the determinant each trading period as to constraining grid use. However, as outlined in the response to Question 54 above, this will not be efficient.

Question		NZ Steel response
56	Do you agree that the benefit-based charge, in conjunction with the Commerce Commission regulatory regime and nodal prices, is sufficient to ensure efficient investment in the grid and by grid users?	No. Insufficient peak signalling will encourage load, leading to the need for earlier than necessary investment. By the time this shows up in nodal prices, it will be too late to factor into efficient decision making by consumers, and will negatively impact Commerce Commission processes for timely consideration of Transpower investment proposals.
58	Do you agree that it would not be efficient to provide for a permanent peak based charge in addition to nodal prices?	No. Please see paragraphs 78 to 81.
68	Do you agree with the approach we have taken to net distributed generation? Do you agree with the application of our netting policy for particular generator(s)? If not, please provide details of particular generator(s) so that we can consider whether to amend our netting arrangements.	Please see the “Introduction to NZ Steel” section of this submission for information on the NZ Steel site cogeneration. It is integrated into the iron making facilities and process.
69	Do you consider that the data used in the impacts modelling (in particular, demand and generation volumes) should be adjusted? If so, please provide reasoning/quantitative calculations.	Please see the response to Question 33 above.