Meeting date: 10 February 2026
Additional information on adjustment events

Preface

This note follows discussion at the 2 February IWG meeting where members sought further insight into policy context behind each of the issues being considered. Additionally, actual pricing information and outcomes to inform discussion, options identification and assessment.

The information has been prepared quite quickly; it is not complete in every instance and has not be subject to a rigorous assurance process. That assurance will occur prior to publication via consultation materials.

Backstory and policy context

The current TPM was developed by Transpower following TPM guidelines issued by the Electricity Authority in June 2020. The "intent" of the TPM guidelines is set out on pages 2 and 3 of this document. The Authority's policy decisions and reasons are provided in its TPM guidelines decision paper.

Transpower's 441 page submission to the Authority contains rationale for its proposed TPM (surprisingly little on the rationale for the 10MW adjustment threshold for embedded plant).

Precision vs practicality

The "general matters" section of the TPM guidelines established principles Transpower should follow. This includes:

> b. balance the economic benefits and costs of precision of the **TPM** with the economic benefits and costs of practical considerations including:
>
> (i) robustness;
>
> (ii) simplicity;
>
> (iii) certainty, including through limiting the need for Transpower to exercise discretion; and
>
> (iv) costs associated with developing, administering and complying with the **TPM**;

This provision mirrors text in the TPM guidelines decision paper.

The IWG will consider this principle in relation to benefit-based charges generally later in the year. For now, the focus is on adjustment events and other workstream one issues.

The concern raised by Transpower in relation to adjustment events relates to its practicality to apply, this is in part due to:

- the *number of events* which is driven by the threshold (which seek to give effect to the principle that **large** -i.e. grid-scale - plant be charged the same regardless of whether connected to the grid or embedded). Transpower's hypothesis is that

the 10MW threshold is too low, that this should be higher or embedded plant be excluded altogether

- how and when Transpower performs adjustment calculations. Specifically, its current practice of calculating each adjustment when received then washing up rebates until the next pricing year (even if these are just a few dollars).

The balance of this note discusses the policy intent, how the current 10MW threshold was arrived at and potential alternatives, and materiality. It briefly discusses the process for managing adjustments, though additional information will be presented on this topic.

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1. Defining "large"

The TPM seeks to avoid incentivising generators and demand customers to embed where a grid connection is more efficient. It does this by defining customers that could viably connect to the grid as "**large**" in the interpretation section of the TPM guidelines:

large generating station means a new or existing generating station:

a. that is directly connected to the grid; or

b. that:

(i) is indirectly connected to the grid; and

(ii) Transpower considers, in its reasonable opinion, is of such a size that it could viably connect directly to the grid.

large offtake plant means new or existing electricity consuming equipment:

a. that is directly connected to the grid; or

b. that:

(i) is indirectly connected to the grid; and

(ii) Transpower considers, in its reasonable opinion, is of such a size that it could viably connect directly to the grid.

Then, throughout the TPM including **large** generation and offtake plant as equivalent to directly connected generation and offtake plant.

In developing the TPM, Transpower defined **large** as 10MW. It did consult on this issue, though did not give it a lot of attention:

89. Our initial thinking is a capacity threshold of 10MW would be appropriate to define "large" for new plant or an upgrade. This is based on the thresholds for generator offers in clauses 8.25(5) and 13.25(1) of the Code. We think the same threshold should apply to consumer and generation plant.

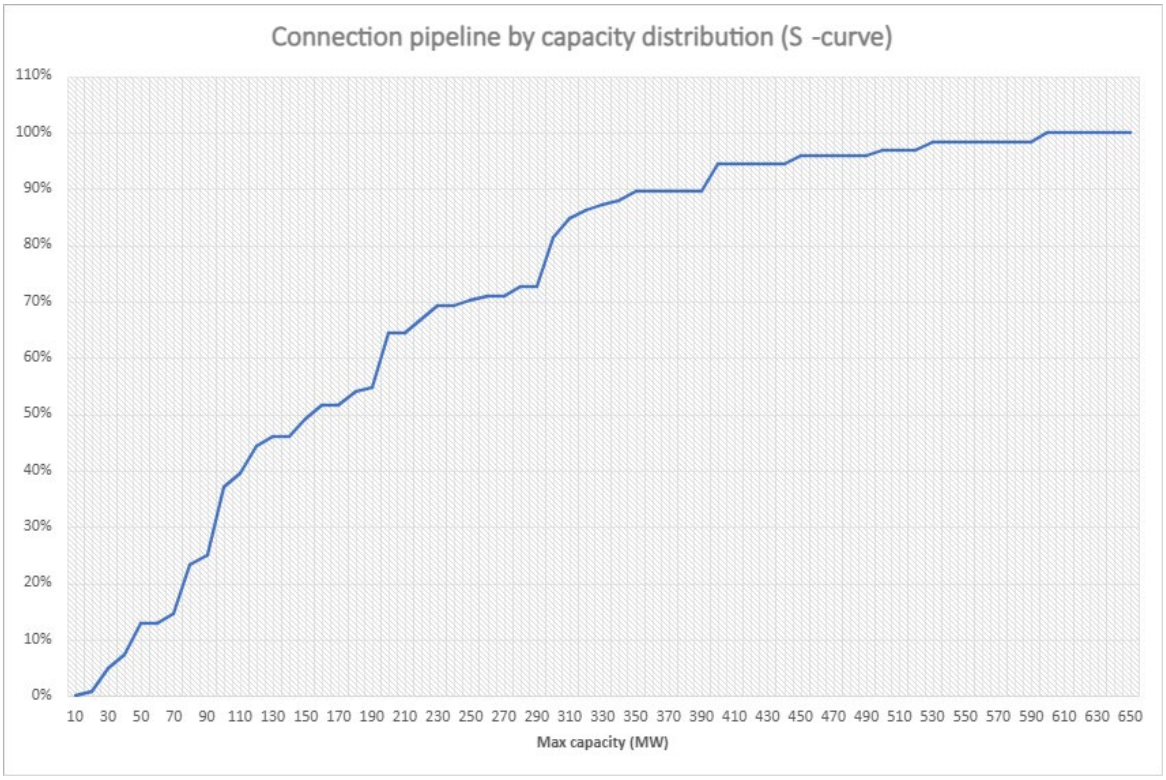
Submitters generally agreed with the proposed rationale, though proportionality to network size was also raised and a higher threshold (25MW or $50,000) were suggested. Submitters gave limited attention to this threshold, perhaps due to the breadth of issues under consideration in this consultation. Responses to Transpower's consultation are here

However, while it is understandable why Transpower adopted the 10MW threshold (the threshold above which generators are required to offer into the market so the System Operator can maintain voltage and frequency) it is not obvious that 10MW has any particular technical or economic basis. As Transpower has subsequently discovered, this threshold is very low, resulting in a large and growing number of small adjustment events.

To understand further, we looked at alternative ways to define **large** for the purposes of assessing viability of grid connection and therefore understanding how pricing might distort efficient connection decisions by generators. Additionally, we looked at the materiality of price changes due to adjustment events and projects in Transpower's connection queue for generation and demand.

What generation plant could viably connect to the grid?

The chart below shows two projects (1.6%) in Transpower's generation connection queue below 25MW (including one below 10MW), 123 (98.4%) are 25MW or larger and 87% are larger than 50MW.



However, plant scale is not the only factor affecting a generators decision of whether to connect to the grid or embed within a distribution network – but it is an important one. For plant below a certain size the cost of connecting to the grid may make the investment uneconomic while, for plant over a certain size, there will be physical constraints that make grid connection necessary (and embedding impractical).

Conclusions - tentative

Generation plant below 25MW is unlikely to connect to the grid except in particular circumstances, for example:

- Expansion of capacity at an existing site
- There is no distribution network to connect to (or that network lacks capacity)

What offtake plant could viably connect to the grid?

[add equivalent queue analysis for demand side – note that this requires filtering of demand type that was not available ahead of this meeting. Initial observations:

- 17 of 19 projects where the customer is named in the offtake connection queue are enhancements to existing GXPs and relate to capacity upgrades requested by EDBs
- The two non-EDB projects (Fonterra and NZ Steel) are for 120MW and 80MW respectively
- A further 3 data centre projects are listed with capacity of 300MW, 150MW and 200MW
- There are a number of "non-connected" projects (implying new GXPs or new customers at an existing GXP) in the investigation stage. However, these have a listed MW value of "0"

This suggests new **large** offtake plant is likely to be in the high tens of MW rather than the 10-25MW range.]

Integrity of this analysis: under current TPM settings generation and offtake plant receive equivalent treatment. This indicates developers are efficiently selecting their network connection option (grid vs embedded) and therefore can be relied on to indicate economic scale for grid connection.

2. Materiality

A key discussion at the first IWG was understanding the materiality of adjustment events and potential consequences of changing the 10MW threshold.

We looked at the impact of adjustment events for PY23 to identify the impact on non-causing customers. These customers received a rebate in the following pricing year.

Materiality of price impact – analysis of 2023 pricing year for rebated customers

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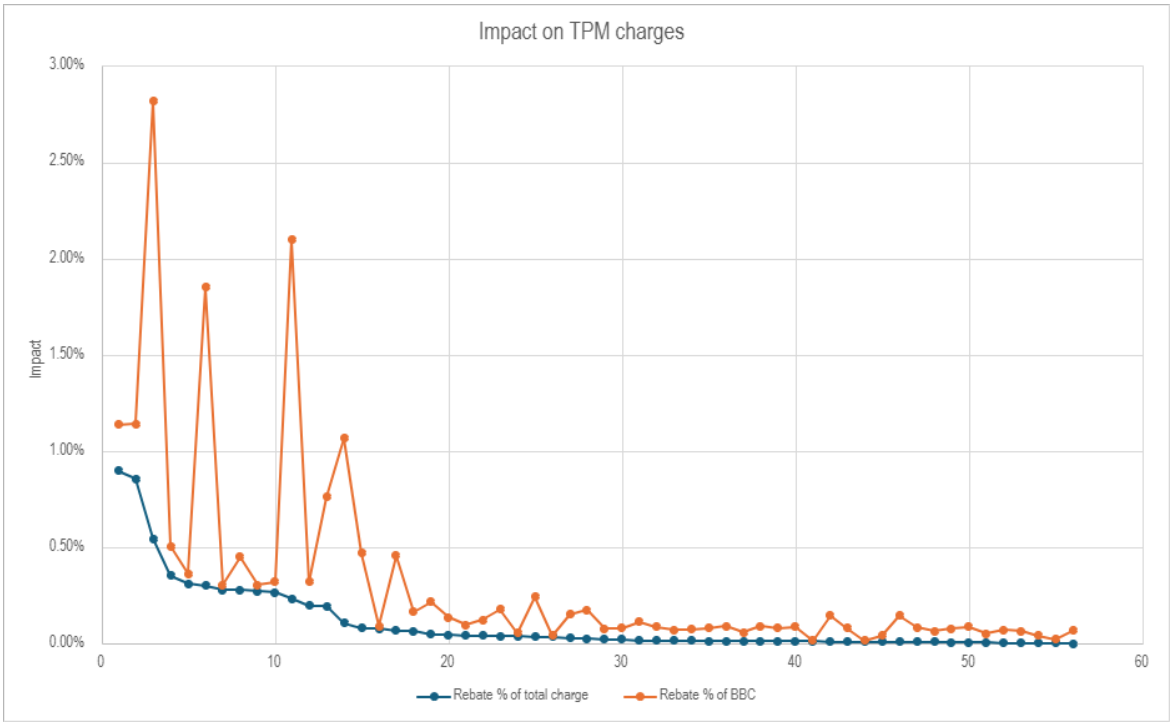

All of Transpower's customers were affected by adjustments to BBIs that resulted in rebates to their next year's prices. However, the changes are very small with the biggest impact being:

- <1% of overall transmission charges
- <3% of benefit based charges

The largest single impact was around $90,000 which is not a trivial sum, but is small in context of overall transmission charges (<0.3%) and BBCs (<.5%) for that customer. This analysis needs to be updated to include later years when available.

Conclusions – tentative

Most of the $ **impact** in the chart above is from a small number of larger adjustments for grid-connected or large embedded plant (~50MW). Most **adjustments** have only a minor impact on other-customer prices. This impact is deferred until the next pricing year via a customer specific wash-up and the continuation of adjusted allocations in future years.

The data is limited to one pricing year so presents an incomplete picture.

Materiality of price impact – all adjustments for causers

We looked at the annualised impact on causers for all adjustment events. These customers received a BBI from the date of commissioning along with other transmission charges.

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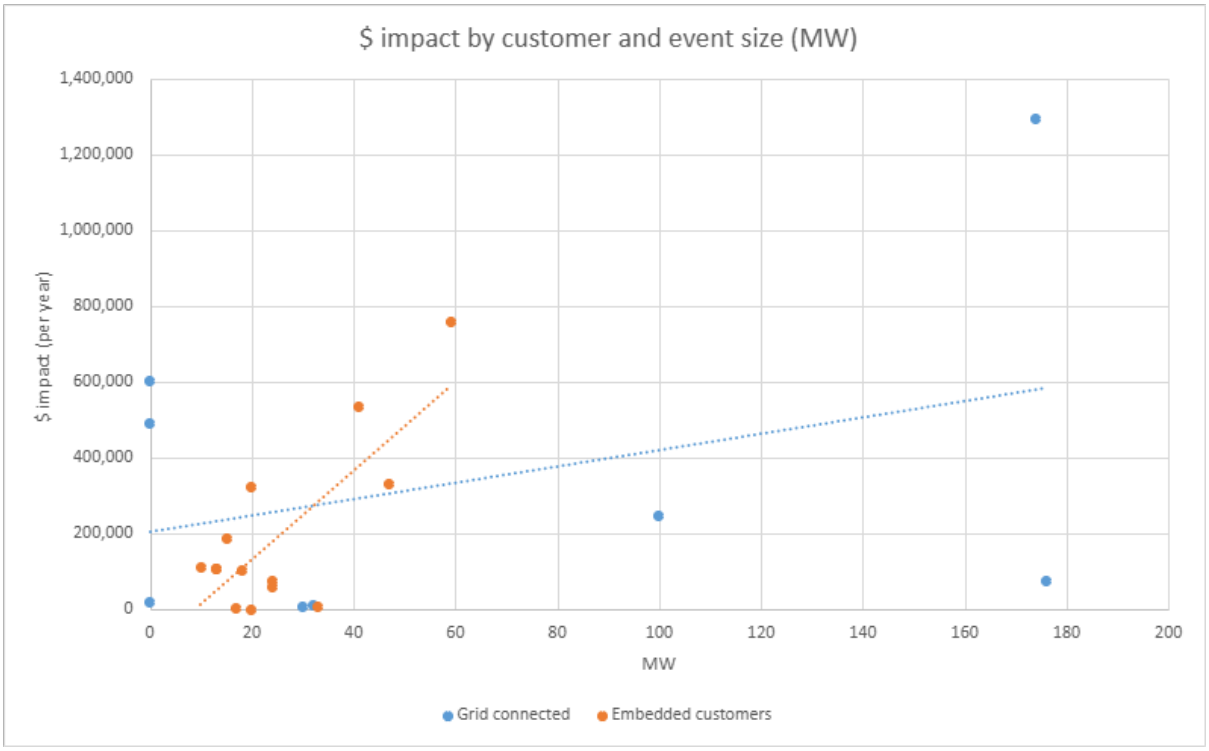
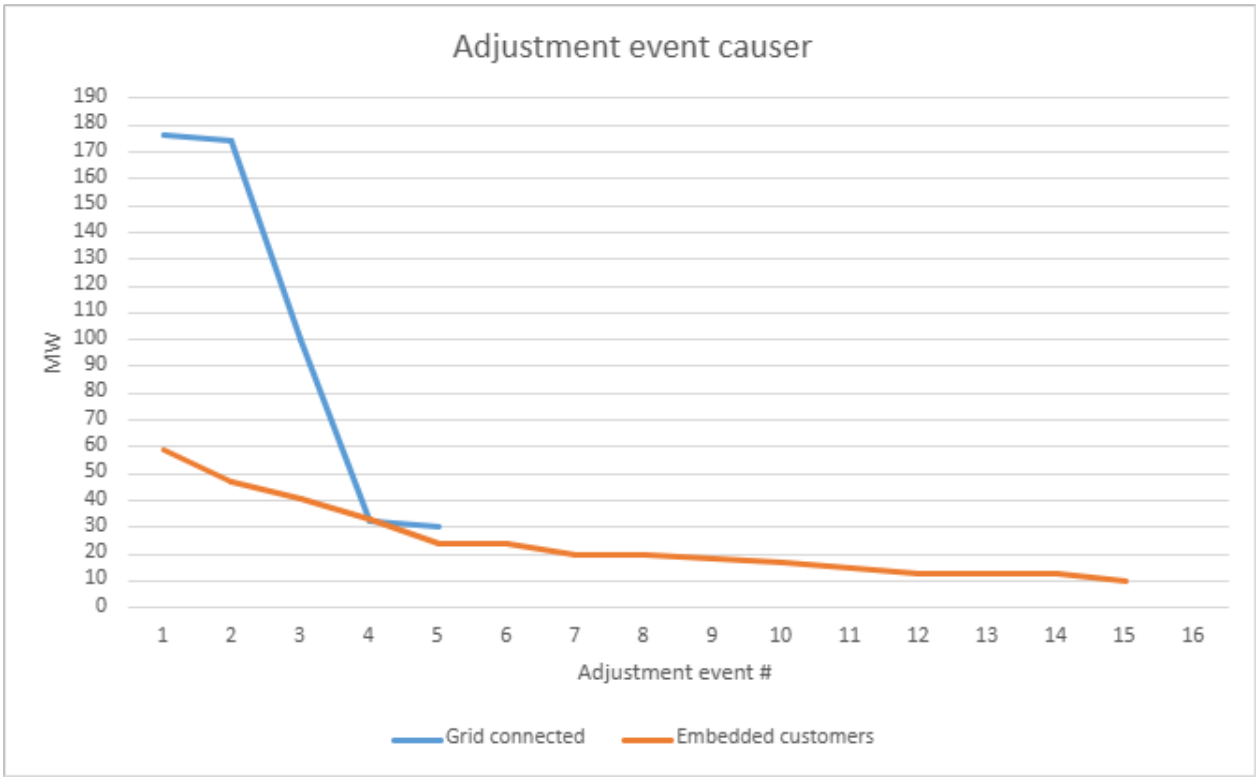
The chart below shows the price impact by customer and event. It shows a cluster of events below 25MW with a relatively small impact on prices. Note, this includes all adjustment events that have occurred prior to and since implementation.



Note: blue dots on the vertical axis represent adjustments with no corresponding MW value (this is being investigated)

Adjustment trigger events

The chart below shows the cause of each adjustment in MW terms, split between grid connected and embedded customers (generation and demand). Excludes 4 adjustments with zero MW value (inquiring further on these cases).



It shows that the smallest grid connected causer was 30MW while, for embedded customers 11/15 were smaller than 25MW with 4 larger than 30MW.

3. What is involved in performing an adjustment?

While every adjustment is different, each adjustment follows the same basic process, requires essentially the same calculations (some automated but many manual i.e. custom spreadsheets). So, the adjustment for a 500MW generation or offtake GXP is similar in effort and complexity to a 10MW embedded generator or offtake plant.

Transpower has mapped the process for operational purposes. This or a version of will be provided to the IWG.

Note from Jeremy: I spent two hours with the pricing technicians stepping through the process from initiation to completion of wash-ups in customer pricing. I will share this in the meeting, the key takeaways were:

- The process is even more complex than I expected and largely manual in nature
- Even a small change necessitate literally dozens of different models to be run and created to determine charges for the causer and to allocate wash-ups for each customer (for each BBI)

- Adjustments are additive, so management becomes progressively more complex and onerous and – I suspect – will at some point become infeasible
- It is possible to materially reduce the complexity, administrative burden and error-risk while also reducing complexity for customers. This can be achieved by:
    - Reducing the number of adjustments, for example by changing the 10MW threshold
    - Batching adjustments and calculating simultaneously (rather than on the exact date of the adjustment event), for example, at the end of the pricing year in the same way connection charges are calculated from the 'pricing grid'.