28 January 2026

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Choice of Gas Price Data to Determine the Electricity Allocation Factor

1. Introduction

1.1 Genesis Energy Limited (**Genesis**) welcomes the opportunity to provide feedback on the Authority's discussion document *Choice of gas price data to determine the Electricity Allocation Factor* (**Discussion Document**).

1.2 As a significant thermal generator with gas-fired generation at Huntly Power Station, Genesis has direct operational experience with the relationship between gas costs and generation offer-setting, and managing the complexity of a diverse generation fleet.

2. Summary of Genesis Position

2.1 Genesis accepts that emsTradepoint (**EMS**) gas price data is the best available proxy for calculating the Electricity Allocation Factor (**EAF**), given the legislative constraints in section 161FA(5) of the Climate Change Response Act 2002 (**CCRA**). On that basis, Genesis supports the Authority's continued use of EMS data.

2.2 However, Genesis has reservations about aspects of the Authority's reasoning. In particular:

(a) The opportunity cost model presented in the Discussion Document is theoretically sound but oversimplified. It does not reflect the complexity of offer-setting by multi-fuel, vertically integrated generators.

(b) Traded volumes on EMS are modest relative to total gas consumption by thermal generators, which limits the direct materiality of EMS spot prices to actual offer-setting.

(c) The correlation evidence presented does not distinguish EMS from alternative gas price series.

2.3 These reservations do not change Genesis' support for the use of EMS data - it remains the best available option that meets the legislative requirements. However, they underscore that the EAF is necessarily an approximation of a complex market reality, and reinforce the importance of prudential safeguards.

2.4 Genesis proposes a simple monitoring framework to maintain confidence in data quality over time, as set out in section 6 below.

3. Scope of the EAF

3.1 Genesis notes that the EAF is an administrative estimate used to determine industrial allocations under the CCRA (Discussion Document, para 2.2). The Authority's choice of gas price input affects a modelling parameter for calculating ETS unit allocations to emissions-intensive, trade-exposed industries. It does not direct dispatch outcomes, constrain generator offer-setting in the wholesale electricity market, or otherwise affect the operational decisions of market participants.

3.2 This distinction is important context for assessing the Authority's approach. The question before the Authority is which publicly available gas price series best estimates what thermal generators' offers *would have been* absent the ETS—not what prices generators actually pay under bilateral contracts or how they should set offers in real time.

4. Opportunity Cost: Theory and Practice

The theoretical model

4.1 The Discussion Document identifies opportunity cost as the basis for estimating generator offer behaviour. As the Authority states at paragraph 5.16:

> *"[I]f gas spot prices rise, this signals to thermal generators that the value of gas needed to generate electricity has risen, even if that gas has already been purchased at a lower cost by those generators ahead of time. Generators must weigh up whether to use this gas today to generate electricity, or conserve or sell it instead."*

4.2 This is consistent with standard economic principles. In a stylised model with a single-fuel, price-taking generator and frictionless markets, opportunity cost pricing is the efficient approach.

Practical complexity

4.3 Genesis observes, however, that the relationship between gas spot prices and thermal generation offers is more complex in practice than this theoretical model suggests.

4.4 Thermal generators with multi-fuel capability (such as Huntly Power Station) consider the relative economics of available fuels - including coal - when formulating offers and running decisions. The decision to run gas-fired generation on any given day takes into account a range of factors including gas spot prices, coal prices, hydro storage levels, transmission constraints, expected renewable output, and electricity and gas customer demand. These decisions and offers are not principally or mechanically driven gas spot prices.

4.5 Moreover, traded volumes on EMS are modest relative to total gas consumption by thermal generators. In most instances, this limits the impact of EMS spot prices to Genesis offer-setting in practice.

4.6 The opportunity cost framework also assumes that generators can freely *realise* the opportunity to sell contracted or produced gas at the EMS spot price. In practice, contractual constraints, volume limits, production commitments, outages and storage capacity all constrain this option.

4.7 None of this means EMS data is the wrong choice - it remains the best available proxy given the legislative requirements. But it underscores that the EAF is an approximation, not a precise measure of thermal generation costs.

5. Observations on the Authority's Analysis

5.1 Genesis offers the following observations on specific aspects of the Discussion Document.

Correlation evidence

5.2 The Discussion Document presents a correlation between EMS gas prices and Ōtāhuhu electricity spot prices (Figure 1, para 5.18) as evidence that EMS prices "closely track the SRMC of thermal electricity generation."

5.3 Genesis notes that this correlation is expected—gas is a material input to thermal generation, so any reasonable gas price measure would correlate with electricity prices. The correlation demonstrates that gas prices matter to electricity prices; it does not demonstrate that EMS spot prices are *more accurate* than alternative gas price series. A comparison showing that EMS predicts electricity prices better than alternatives may be more probative, but the Discussion Document does not present this.

Comparison with Genesis data

5.4 Figure 2 of the Discussion Document compares EMS daily spot prices (and rolling averages) with Genesis's quarterly volume-weighted average cost of gas burned. Genesis notes that these are conceptually different measures: EMS is a marginal, daily, forward-looking spot price, whereas Genesis' reported cost is a backward-looking average that includes contracted gas as well as spot purchases.

5.5 The Authority observes that EMS prices are not always higher than Genesis's reported costs. This is a useful data point, but it does not validate the opportunity cost theory. If Genesis' actual costs systematically diverge from pure spot prices—as they do, given the blended nature of fuel procurement—this is evidence of the gap between the theoretical model and operational reality.

Timeliness and hybrid approaches

5.6 The Authority rules out MBIE and Stats NZ data on timeliness grounds—these sources are published with a lag that makes them unavailable for the 31 July deadline.

5.7 Genesis observes that the timeliness constraint may be less binding than the Discussion Document suggests. Genesis publishes quarterly operational reports for Q1–Q3 approximately one month after each quarter ends, and its Q4 operational report in late July - before the 31 July EAF deadline. This means Genesis's published gas cost data for all four quarters of the relevant year would typically be available in time for the EAF calculation.

5.8 The Discussion Document does not consider whether a hybrid approach - using published generator or industry data where available, with EMS as a cross-check or gap-fill - might address concerns about EMS representativeness while meeting the legislative deadline.

5.9 We do not propose a hybrid approach but suggest the above may be useful context to consider.

6. EMS Data Quality and Safeguards

6.1 Given the analytical limitations noted above, Genesis suggest the Authority consider adopting a simple monitoring framework to maintain confidence in data quality over time.

Monitoring

6.2 The Authority could consider monitoring EMS liquidity metrics on an ongoing basis. This could assist early identification of sustained deterioration in market depth that could affect the representativeness of daily price observations.

Triggers and response

6.3 If EMS data were to exhibit persistent low-liquidity periods or anomalous price prints, the Authority could apply a short rolling average (for example, a 5- or 30-day average) as a smoothing mechanism while remaining within the publicly available EMS-derived price series. The Authority already uses rolling averages for analytical purposes (Discussion Document, Figure 2). Genesis does not propose specific thresholds; these are appropriately matters for the Authority to determine.

Platform continuity

6.4 Transpower has signalled it will support emsTradepoint "through 2025 and beyond" (Discussion Document, para 5.10). Genesis welcomes this commitment but notes that it is less durable than the legally-mandated disclosure frameworks underpinning MBIE and Stats NZ data. Should the platform's product settings change materially, or discontinuation risk re-emerge, the Authority should re-assess the suitability of available data sources and consult with affected stakeholders before the next EAF calculation.

7. Conclusion

7.1 Genesis supports the Authority's use of EMS gas price data to calculate the EAF. EMS data is the best available proxy that meets the legislative requirements of the CCRA.

7.2 Genesis has reservations about the theoretical model underpinning the Authority's analysis. The opportunity cost framework is sound in principle but does not reflect the complexity of offer-setting by multi-fuel, vertically integrated generators. Traded volumes on EMS are modest relative to actual thermal fuel consumption, limiting the direct materiality of EMS spot prices.

7.3 These reservations reinforce that the EAF is an approximation, not a precise measure of thermal generation costs. We ask that the Authority consider the safeguards proposed in section 6 to maintain confidence in data quality over time.

7.4 We appreciate the Authority's transparency in sharing this analysis with stakeholders. Please don't hesitate to contact me should you wish to discuss our feedback of have queries.

Yours sincerely

Warwick Williams
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