

4 August 2026

Ms Catherine Somerville-Frost
Panel Chair
Bream Bay Extraction Project

Dear Ms Somerville-Frost

Correction and clarification concerning the treatment of emissions under the ETS

I am writing to correct and clarify an aspect of section 4 of my report dated 23 February 2026 concerning ME Consulting's claimed emissions and health-related cost savings. On reviewing that analysis, I have concluded that two related aspects require amendment:

- my treatment of the ETS as constraining gross rather than net emissions; and
- my interpretation of the economic meaning of the shadow price of carbon applied by ME Consulting.

Those amendments change part of the reasoning in sections 4.2 to 4.4 of my report, but do not alter my ultimate opinion. I remain of the view that ME Consulting has not provided a robust evidential basis for the environmental-cost savings it reports.

1. Gross and net emissions

My report proceeded on the basis that New Zealand's ETS operated as a binding cap on gross emissions. Under such a cap, a fixed quantity of New Zealand Units (NZUs) permits a corresponding quantity of gross emissions. If one activity reduces its emissions by X tonnes and requires X fewer NZUs, those units remain available to support an equivalent increase in emissions elsewhere. The source of the emissions changes, but aggregate gross emissions do not.

That reasoning underpinned the stadium-seat analogy and Figure 4.1, and my conclusion that lower transport emissions associated with the Bream Bay proposal would merely reallocate, rather than reduce, aggregate gross emissions. However, New Zealand's framework constrains *net* rather than *gross* emissions. NZUs are also issued for qualifying removals, principally through forestry, and may be surrendered against gross emissions.

Consequently, while the one-for-one displacement described in my report remains possible, it is not inevitable. The adjustment may instead involve less abatement, fewer removals or some combination of those outcomes. I therefore withdraw the stadium-seat analogy and Figure 4.1, together with my conclusion that any reduction in transport emissions would necessarily be offset by additional gross emissions elsewhere over time.



2. Implications for the shadow-price analysis

My report assumed that ME Consulting's claimed \$34.4 million benefit would arise only if lower transport emissions reduced New Zealand's aggregate net emissions. On that basis, I concluded that there would be no economic benefit if the reduction were offset by equivalent emissions elsewhere.

That reasoning was too narrow. A reduction in transport emissions can produce an economic benefit even if aggregate net emissions remain unchanged. If transport emissions are one tonne lower, the same net emissions target can be met without an equivalent tonne of abatement or removals elsewhere. The resulting benefit is the cost of that avoided action, rather than necessarily a reduction in climate damage.

I therefore withdraw my conclusion that ME Consulting's estimate is conceptually invalid simply because the reduction in transport emissions may be offset elsewhere. Applying a shadow price of carbon is capable, in principle, of capturing a genuine economic benefit in those circumstances. However, nothing in the analysis above establishes that ME Consulting's particular estimate is correct or robust.

3. Remaining concerns with ME Consulting's estimates

Four concerns remain with ME Consulting's claimed \$34.4 million benefit and its reported \$104 million overall environmental-cost estimate.

First, the transparency and verification concerns identified in my report are unaffected by this correction. As explained in sections 3 and 4.1, ME Consulting has not disclosed the underlying transport modelling, assumptions and calculations in sufficient detail to permit its emissions and health-cost estimates to be independently reproduced or tested. It is therefore not possible, on the information provided, to determine whether those estimates are reliable.

Second, a potentially important double-counting issue remains unresolved. ME Consulting calculates its transport-cost saving using an industry-derived road-freight rate of 30 cents per tonne-kilometre excluding GST¹ but provides no detail on the source or composition of that rate, or on any adjustments made to it.² A commercial freight rate would ordinarily include fuel costs, including any ETS-related amount reflected in the price of diesel.

Although the ETS price and the shadow price of carbon are different measures, both attach a value to the same underlying emissions. Any ETS-related amount already embedded in the freight rate would therefore need to be identified and reconciled before the separate \$34.4 million benefit could properly be added. ME Consulting does not explain whether it has done so and has therefore not established that the full \$34.4 million is additional to its claimed transport-cost saving.

¹ ME Consulting report, paragraph 137.

² ME Consulting states that "Industry information indicates that the medium-term average cost to move a tonne of sand 1km along the road network is between 30 cents and 40 cents." However, it provides no reference, source or supporting analysis for that "industry information".



Third, the calculation appears to assume that the additional road freight under the counterfactual would continue to be undertaken by diesel-powered trucks with broadly current emissions characteristics throughout the 35-year appraisal period. That may be reasonable in the near term, but less so over the full period. If lower-emissions heavy vehicles progressively displace diesel-powered trucks, the claimed carbon and health benefits from avoiding truck movements would also decline.

Finally, ME Consulting's health-cost estimate captures only the direct effects associated with the transport activities it has modelled. It does not establish the net national health effect, because some or all those direct benefits could be offset by health effects associated with additional gross emissions elsewhere. That outcome remains possible even under a net emissions cap, although it is not inevitable because the adjustment may instead occur through less abatement or fewer removals.

4. Revised conclusion

I therefore withdraw the conclusions in sections 4.2 to 4.4 of my report that ME Consulting's claimed \$34.4 million benefit is conceptually invalid merely because New Zealand operates an ETS or because the reduction in transport emissions may be offset elsewhere.

However, that correction does not establish that either the claimed \$34.4 million benefit or ME Consulting's reported \$104 million overall environmental-cost estimate is robust.

I remain of the view that ME Consulting has not provided a robust evidential basis for the environmental-cost savings it reports. The correction changes an important part of my reasoning but does not alter that ultimate opinion.

Yours sincerely,

A handwritten signature in blue ink, appearing to read 'H. Green', with a long horizontal flourish extending to the right.

Hayden Green
Director
Axiom Economics Limited