www.aeservices.co.nz
office@aeservices.co.nz
Auckland +64 9 917 0369
Wellington +64 4 890 0122
Christchurch +64 3 377 8952

Memorandum

To:	Ralph Henderson (Boffa Miskell)
From:	Jeremy Trevathan (Acoustic Engineering Services)
File Reference:	AC23320 – 05 – R1
Date:	Tuesday, 14 October 2025
Project:	Contact Energy Southland Wind Farm Fast-Track Consultation Comments on noise related matters
Pages:	6

Meeting ☐ Telephone ☐ Memorandum ☑ File Note ☐

Dear Ralph,

As requested, I have reviewed the noise related documentation submitted in support of the Contact Energy Southland Wind Farm project (SWF) Application for Resource Consent, which has been referred to an Expert Consenting Panel under the Fast-Track Approvals Act 2024.

I have previously provided feedback on the Draft Noise Effects Assessment for a previous version of the project being assessed under the Covid-19 Recovery (Fast-Track Consenting) Act 2020, which was subsequently declined consent on the 18th of March 2025 for non-noise related reasons.

This review is primarily focused on the Noise Effects Assessment (NEA) prepared by Marshall Day Acoustics (MDA) for the Application, but I have also reviewed information from other documents within the Application where relevant to noise emissions, as follows:

- Application document titled *Part A – Overarching Substantive Application Document*, as prepared by Mitchell Daysh, and dated the 22nd of August 2025.
- Application document titled *Part B – Approvals Relating to the Resource Management Act 1991*, as prepared by Mitchell Daysh, and dated the 22nd of August 2025.
- Application document titled *Part H – Southland Wind Farm Technical Assessment #11: Noise*, as prepared by Marshall Day Acoustics, and dated the 18th of August 2025.
- Application document titled *Part H – Southland Wind Farm Technical Assessment #12: Transport*, as prepared by Stantec, and dated the 18th of August 2025.
- Application document titled *Part I – Proposed Southland Wind Farm Consent Conditions*, as prepared by Mitchell Daysh, and dated the 22nd of August 2025.
- Application document titled *Part J – Southland Wind Farm Construction Noise Management Plan, Draft Issue*, as prepared by Marshall Day Acoustics, and dated the 9th of June 2025.

- Record of Decision of the Expert Consenting Panel under the Covid-19 Recovery (Fast-Track Consenting) Act 2020 for the Southland Wind Farm Project, issued on the 18th of March 2025.

1.0 PANEL FINDINGS FOR PREVIOUS APPLICATION

Under the previous Application, the Expert Consenting Panel had the following findings:

- Various submitters requested a condition requiring the Applicant to provide double glazing for dwellings affected by noise. The Panel concluded that construction and operational noise will comply with the relevant Standards so there is no need to impose such a condition.

- The Panel accepted that potential noise effects during construction activities will be addressed through management plans.

- The Panel acknowledged that there will be a noticeable change in noise levels for construction traffic on local roads (particularly Venlaw Road), but accepted that the activity is temporary and will remain within acceptable levels.

- The Panel concluded that any potential adverse effects associated with construction and operational noise can be adequately addressed through the imposition of conditions of consent, including requirements to comply with relevant Standards.

2.0 COMMENTS ON NOISE EFFECTS ASSESSMENT

The proposal includes the construction and operation of a wind farm containing up to 55 new wind turbines across approximately 58 km^2 of land currently used for farming and forestry activities. The wind farm will use a 'turbine envelope zone' approach, allowing for small relocations based on site conditions. The closest residential dwelling is in the order of 2.3 km removed from any of the turbine envelope zones.

As mentioned above, I have previously provided feedback on the noise assessment for the previous Application (AES file reference AC23320 – 01 – R1, dated the 23rd of July 2024). Several of the comments I provided as feedback for the previous assessment are still applicable, and have been included in the review below where relevant.

I have the following comments relating to the NEA:

- MDA have correctly identified the applicable noise Standards for construction and operational activities, and have adopted appropriate noise limits for the project.

- Measurements of background noise levels and corresponding wind conditions were conducted at the six noise sensitive receivers nominated as being representative of worst-case locations relative to noise from SWF. The measurement methodology was appropriate, and I consider that the results are suitable for providing guidance on the existing noise environment.

- I agree that a high amenity provision for wind turbine operational noise is not appropriate in this case based on the measured ambient noise levels and nature of the receiving environment, with the resulting noise limit being 40 dB L_{A90} or the background noise level + 5 dB, whichever is greater.

- The operational and construction noise modelling approach is in line with standard industry practice, and the predicted noise emissions are generally reasonable.

- Noise from use of the workshop associated with the Operational & Maintenance facility appears to rely on any external doors being closed. From my experience typically this type of workshop would have large roller doors which remain open during use, increasing the amount of noise that is transmitted to the environment. I recommend that MDA provide clarity regarding how this activity has been assessed, although I expect that it is realistic that noise from this source would still be able to comply with the applicable noise limits at receiving sites with roller doors open.

- Cumulative wind farm noise emissions from the nearby Kaiwera Downs Wind Farm (KDWF), including the consented but not yet constructed Stage 2, have been considered, which is appropriate.

- I reiterate my previous concerns regarding noise from transport of the wind turbine and electrical components to the site. From a review of the Transport Assessment it is likely that this will require 662 deliveries of over size components over a period of 180 days, which due to various operational constraints will result in the oversize convoys passing through both urban and rural residential settings during the night-time period. While there is not a detailed breakdown of the proposed transportation schedule available at this stage, a worst-case scenario could feasibly result in night-time deliveries every night for a period of six months. MDA have predicted noise levels in the order of 60 – 70 dB L_{Aeq} for dwellings within 10 – 20 metres of the convoy's path. As shown in figure 1 below the overall transport path taken by the oversize night-time deliveries is in the order of 110 – 130 km and passes through Invercargill along with several townships. This results in a large number of both urban and rural dwellings that would be expected to experience elevated noise levels of this magnitude for each of the 662 night-time deliveries.

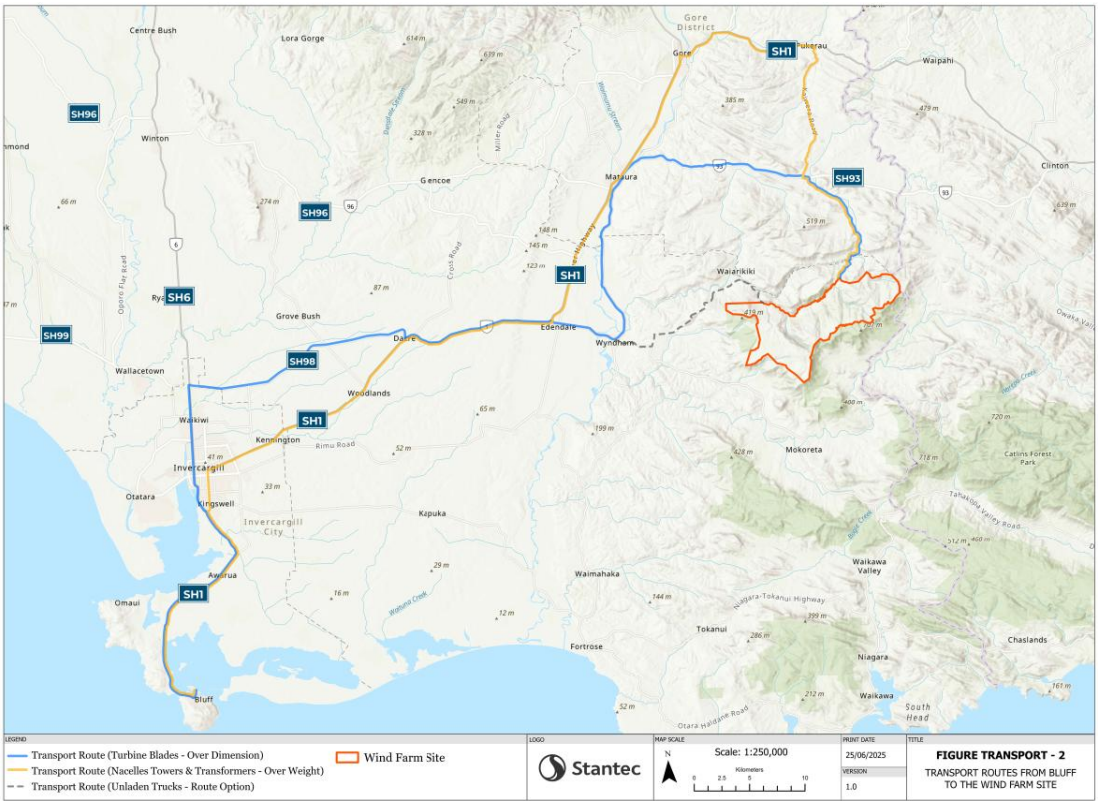

Figure 1 – Oversize delivery transport routes (reproduced from Part G – Technical Report Maps)

MDA have concluded that this activity would result in temporary minor noise effects as night-time heavy vehicle movements are an anticipated noise source in the area, and the project would not significantly add to the traffic volumes at most receivers. From my understanding the transportation methods required to move wind turbine components are significantly different to standard heavy vehicle movements, as the trucks need to travel slowly in built up areas or sections of road with corners or roundabouts so that tracking does not result in damage to the equipment or nearby infrastructure. Pilot cars and other support vehicles such as crane trucks or trucks with basket lifts are also required during the transportation. Due to the oversize nature of the components, delivery often requires temporary removal or relocation of street signage, lamp posts, power lines and the like, all of which increases the amount of time the noise is present near potential receivers, as well as adding new noise sources. This can in part be conducted prior to the arrival of the delivery vehicles, but often can only be assessed and enacted on site. Overall I still have concerns regarding the noise

effects of this portion of the activity, and recommend that further clarification of the delivery schedule and noise mitigation processes is provided.

- Total daytime heavy vehicle deliveries associated with construction of the project are expected to be in the order of 28,500 over the full construction period, with an anticipated maximum of 60 deliveries in a day and 10 in a worst-case hour. MDA have concluded that this will result in an approximately 6 dB increase for some worst-case receivers on Venlaw Road where the current traffic volumes are less than 100 vehicles per day. I agree with the MDA conclusion that this increase is reasonable and does not require mitigation.

- There is mention of helicopters being used for the erection of turbines in areas that are not feasible or safe for cranes to access. This is a common construction approach, and while I agree with MDA's conclusion that noise effects can be appropriately managed for this activity there could be further clarity given around anticipated flight paths.

- I agree with MDA that low frequency noise from the turbines is not expected to be significant or have any adverse effects.

- Several submitters raised concerns around elevated noise levels being present in areas where farm workers will be operating outside in the daytime. I agree with MDA's response that this is not a protected activity with regard to noise amenity in rural areas, and note that the predicted noise levels at nearby farmland not on the project site are expected to be well below thresholds resulting in any degradation of concentration or where loss of ability to communicate could occur.

3.0 COMMENTS ON PROPOSED CONSENT CONDITIONS

I have reviewed the proposed Consent Conditions relevant to noise emissions and management, and have the following comments:

- Condition G6 requires the Consent Holder to construct, operate and maintain the project in accordance with all certified management plans and any subsequent amendments or updates. This is appropriate where the management plans have been thoroughly reviewed prior to approval, as is required by the individual Conditions specific to each plan.

- Condition G6A requires the provision of detailed drawings and design reports specifying how the project is consistent with the approved scheme a minimum of three months prior to construction. This is appropriate.

- Conditions MP1 and MP2 require the provision of a Construction Noise Management Plan (CNMO) within a wider Construction Environmental Management Plan (CEMP) prior to the commencement of construction activities, to be prepared by a Suitably Qualified and Experienced Person (SQEP). Conditions MP4, MP4A, MP5, and MP6 outline the requirements for Independent Management Plan Reviewer(s) to be appointed to review draft management plans and provide feedback to be adopted prior to the plans being submitted to applicable District and Regional Councils for final review. While this is generally appropriate, I note that the only prescribed timeframe is that the Councils are provided the plans 15 days before construction commences, which places the emphasis on the Consent Holder to prepare the draft plans sufficiently in advance for the Independent Management Plan Reviewer(s) to be able to conduct an appropriately detailed review. It may be preferable to stipulate that this stage is completed at least 30 days prior to construction commencing.

- Condition MP9 requires the management plans to be resubmitted for certification if the relevant Councils recommend changes or decline the plans. This is appropriate, although it may be preferable to include a clarification that in this scenario construction is not to be permitted to proceed until all relevant plans have been certified.

- Conditions MP10 and MP11 outline the procedures where minor amendments or more significant changes are made to management plans, and are generally appropriate. However I note there may

be need for clarity in MP11 around whether significant changes to the plans should result in a ceasing of construction activity until the plan has been certified.

- Conditions WF1, WF2, and WF4(a) provide limitations on the number of turbines, their maximum height, and location. These conditions are appropriate.

- Condition WF3 requires all turbines within SWF to be a similar size and type with three blades, and notes that external transformers at the base of the tower are permitted, which is generally appropriate. However, if different turbine models or layouts are adopted currently this condition would permit a higher level of noise generation than has been assessed in the NEA while still complying with the proposed noise limits. It is unclear at this stage whether this would have any material impact on noise effects at neighbouring sites, but it may be beneficial for this to be considered in the scenario that an updated assessment is required.

- Conditions WF15, WF17, WF18, WF19 and WF20 provide limitations on the number, location and heights of temporary construction compounds, concrete batching plant, and permanent buildings associated with the project. These conditions are appropriate.

- Condition NO1 outlines that noise from all activities associated with the construction of the project shall be measured and assessed and controlled in accordance with the requirements and long term activity noise limits outlined in NZS 6803:1999. In this case, it appears that it is practicable to comply with such a Condition, and so the proposed wording is appropriate.

- Conditions NO2 and NO3 outline the requirements for an SQEP to prepare a CNMP with regard to the requirements of Section 8 of NZS 6803:1999 and the requirements to adopt best practicable options for minimising noise outlined in Section 16 of the Resource Management Act. This is appropriate, and I consider that the list of items for inclusion outlined in condition NO3 is generally suitable assuming that noise management for night-time heavy vehicle movements is appropriately outlined in the conditions relating to a Transport Management Plan. I note that I have reviewed the draft CNMP provided in support of the Application and consider it to be generally appropriate, subject to being updated to refer to final consent conditions and activity descriptions.

- Condition NO5 requires that all wind turbines are constructed, operated and maintained to ensure that noise generated by SWF complies with the requirements of NZS 6808:2010; namely that noise emissions from operation of the project do not exceed a limit of 40 dB L_{A90} or the background noise level + 5 dB, whichever is greater. An advice note is provided which clarifies that this results in the noise limits applying at neighbouring dwellings (i.e. not on the project site) that exist, or are permitted by a Resource Consent or Building Consent at the time of commencement of the Resource Consents associated with the project. This is an appropriate control, although for clarity I recommend that the wording is changed to reflect that this applies to noise from wind turbine operation rather than the project as a whole, as non-turbine operational noise is subject to other controls. Condition NO5 also includes a note that where the 'background +5 dB' approach is applied, wind turbine generation from existing operational wind farm activity in the locality shall be excluded from the background noise levels via calculation. This approach is in line with Clause 5.6.3 of NZS 6808:2010 and is appropriate.

- Condition NO6 requires an updated prediction report to be provided 20 days prior to the installation of any turbine associated with SWF, and notes that it should be in accordance with Clause 8.4.2 of NZS 6808:2010. This Clause is applicable where a consenting envelope approach is adopted and notes that if the selected turbine layout has not changed since the initial prediction report and the sound powers of the selected turbines are the same or lower, an updated report is not required. The condition also notes that any wind turbine controls required to comply with the consented noise limits must be implemented before the turbines commence operation. Overall the condition is appropriate.

- Condition NO7 requires that wind farm sound is measured and assessed in accordance with NZS 6808:2010, including a narrow band tonality test. This is appropriate.

- Condition NO8 requires a compliance assessment in accordance with Clause 8.4.1 of NZS 6808:2010 to be prepared by a SQEP within three months of commissioning of the final wind turbine associated with SWF, with assessments conducted at each of the six neighbouring dwellings identified in the NEA. I note that Clause 8.4.1 of NZS 6808:2010 includes an additional requirement for scenarios where a staged development approach is adopted, in which case separate compliance assessments are required at the completion of each stage. While currently a staged approach has not been proposed, I recommend that the wording of the condition is adjusted to make reference to the requirements regardless. The condition includes requirements for mitigation to be implemented in scenarios where non-compliances are identified, unless it can be shown through testing that SWF is not responsible for the exceedances. While this is generally beneficial to include, this approach may not provide sufficient protection for affected receivers where there is no specified timeframe for mitigation works to be implemented in, or instructions for ceasing of operation until remediation has occurred.

- Condition NO9 outlines the applicable noise limits for non-turbine operational activities, depending on the time of day and the location of the receiving site. The noise limits are appropriate in the context of the various District and Regional Plans that are to be considered. The condition also notes that noise shall be measured and assessed in accordance with NZS 6801:2008 and NZS 6802:2008 except where otherwise specified, which is appropriate.

- Conditions SC1 – SC10 outline the stakeholder communication and engagement processes for the project during construction and operation, including complaints procedures. I consider that these processes and procedures will be generally appropriate for assisting with the management of noise related effects.

- Condition TR1 outlines the requirement for a Construction Traffic Management Plan to be provided as part of the overall CEMP, and Condition TR2 outlines the minimum information to be included in the plan. While I consider that the requirements are generally appropriate, as discussed above I consider that noise effects associated with night-time wind turbine component deliveries require further consideration, and would recommend that clause e) of Condition TR2 is amended to include a sub-point relating to management of noise emissions, along with reference to any specific mitigation measures that may arise following further discussion about noise effects.

I trust this is of assistance.

Kind Regards,

Dr Jeremy Trevathan
Ph.D. B.E.(Hons.) Assoc. NZPI®
Principal Acoustic Engineer
Acoustic Engineering Services