

Mangamaire Solar Farm Hearing – 31 August 2023

Speaking Notes for Mary Hamilton of Marshall Day Acoustics

My name is Mary Hamilton. My experience is detailed in my evidence.

I've prepared a plain language summary of my evidence. Assuming my evidence has been pre-read, I can give this brief summary and go to questions, or if preferred, I can go straight to questions.

Summary

- My noise assessment included an ambient noise survey and the calculation of noise from operational noise sources. Thirteen inverters are the primary operational noise source.
- Under a worst-case scenario (worst case directivity and 100% inverter load), I calculate compliance with the District Plan noise limits.
- Based on the measured ambient and background noise levels, I consider that there is risk that the solar farm could generate electro-mechanical noise at levels that appreciably exceed the existing night-time (evening/early morning) ambient and background noise levels at near receivers.
- I recommend that attenuation of the inverters (through methods such as, selection, positioning for directivity, partial or full enclosure) be undertaken as part of detailed design to reduce the intrusiveness of any noise audible outside the solar farm, and as part of RMA Section 16 duties. I have proposed a condition of consent in this regard.
- My assessment also addressed construction noise. I consider that resource consent may be required to breach the construction noise limits for a short period of time at up to eight receivers and that a Construction Noise and Vibration Management Plan (CNVMP) may be necessary to assess and manage construction effects.
- Dr Stephen Chiles undertook a peer review of my acoustic assessment. Overall, there was a broad level of agreement over technical matters.
- Four submitters raised noise as a specific issue of concern. I responded to their questions in my evidence.
- I read Andrew Bashford's planning report and agree with Mr. Bashford's summary of my noise assessment and Dr Chiles comments.
- Overall, the only noise issue that I consider needs to be resolved regards construction noise. Specifically, whether or not the construction noise rule of the District Plan / NZS 6803:1999 is

proposed to be exceeded. A consent condition to require full compliance with the NZS6803:1999 noise limits can be applied and compliance with it could be achieved. This may result in some areas of the piling close to dwellings becoming less practical or potentially more expensive (as alternative piling methods may need to be used). In a worst-case, it could be necessary to reduce the extent of piling close to dwellings.

- If a condition to allow the NZS6803 rules to be breached at times forms part of the consent, I expect that any breaches of the NZS6803:1999 construction noise rule would be brief and could be managed through the diligent implementation of a construction noise and vibration management plan. The key measures would be ensuring that piling near dwellings is carried out at the least sensitive times and that good communication is maintained with residents. Piling using a Vermeer piling rig proceeds quickly, and it is likely that breaches of the rules would only occur for a few days.
- Note also, that if the applicant accepts that they will comply with NZS6803:1999 at all times, then a Construction Noise and Vibration Management Plan is still recommended.

That concludes my summary.

Are there any questions?