

IN THE ENVIRONMENT COURT OF NEW ZEALAND
WELLINGTON REGISTRY

I MUA I TE KŌTI TAIAO O AOTEAROA
TE WHANGANUI-Ā-TARA ROHE

ENV-2024-WLG-000001

Under the	RESOURCE MANAGEMENT ACT 1991
In the matter of	the direct referral of applications for resource consents under section 87G of the Act for the Mt Munro Wind Farm
By	MERIDIAN ENERGY LIMITED Applicant

JOINT STATEMENT OF THE SHADOW FLICKER EXPERTS

31 July 2024

INTRODUCTION

1. This joint expert witness statement relates to the direct referral application lodged by Meridian Energy Limited for resource consents to construct, operate and maintain a windfarm on Mt Munro, Eketāhuna.
2. The shadow flicker experts attending the conference were:
 - (a) Claire West (**CW**) for the Consent Authorities (Manawatū-Whanganui Regional Council, Wellington Regional Council, Tararua District Council, and Masterton District Council)
 - (b) Simon Faulkner (**SF**) for Meridian Energy Limited (**MEL**).
3. The conference took place remotely on 31 July 2024.

AGREED AGENDA

4. The agenda for discussion is set out below in Annexure A.

CODE OF CONDUCT

5. This joint witness statement is prepared in accordance with section 9 of the Environment Court Practice Note 2023.
6. We confirm that we have read the Environment Court Practice Note 2023 and agree to abide by it.

PURPOSE AND SCOPE OF CONFERENCING

7. The purpose of this expert conferencing was to identify, discuss, and highlight points of agreement and disagreement on acoustic issues.
8. Issues have been identified following the reporting of the Consent Authorities in the s 87F reports, and through evidence filed by MEL and the s 274 parties. At mediation in June 2024, the parties also agreed that some issues would be discussed at expert conferencing.

AGREED ISSUES

9. Refer to Annexure A.

DISAGREEMENT AND REASONS

10. Refer to Annexure A.

Date: 31 July 2024



Claire West



Simon Faulkner

ANNEXURE A

In the matter of the Mt Munro windfarm application

Expert conferencing – Shadow Flicker – CW and SF

Issue	Agreed position with reasons	Disagreements with reasons
Topic: Methodology		
1. Appropriateness of methodology.	Both agree the methodology is appropriate.	
2. Confirm the point of measurement of shadow flicker (with reference to any relevant guidelines), including a response to the following specific queries: <ul style="list-style-type: none"> a. Why are shadow flicker effects assessed at the window of a habitable room? b. Why are external areas and work areas (eg: farm buildings) not addressed in the proposed shadow flicker conditions? 	2a. This is covered in the AEE and Guideline (see expert evidence in chief of Simon Faulkner at [71]) – the main effect is when the shadow falls over the window of a naturally-lit room, because the light levels of the whole room will fluctuate. Outdoors the effect is less noticeable and considered to be no more than minor. 2b. The intent is only to protect residential dwellings as per the Guideline. We are not aware of a specific need for additional buildings to be protected. External areas are not subject to such a strong effect as covered in the AEE and Guideline.	
Topic: Effects		
3. Appropriateness of assessment of likely effects.	Both agree the assessment is appropriate.	
4. Refer to page 12 of John Maxwell evidence, in relation to the extent of shadow flicker – confirm whether the lack	The lack of trees has been taken into account. No shielding has been applied in the assessment performed by Rhys Girvan, see paragraph 171 of his evidence in chief, as it is Modelled duration (limit of 30h pa) which does not take account of any shielding.	

Issue	Agreed position with reasons	Disagreements with reasons
<p>of tree cover has been considered as part of assessment.</p>	<p>RG EIC: <i>“171. When assessing the extent of modelled Shadow Flicker, the identified hours do not take account of the orientation or presence of intervening structures or vegetation around the buildings which may restrict direct effects between wind turbines and affected dwellings. It is proposed these more detailed influences will be measured to ensure this effect complies with an acceptable actual level.”.</i></p> <p>John Maxwell evidence pg 12: <i>“The thirteen properties in the Hastwell area are situated primarily to the South and East of the turbine ridge line. This area is <u>not heavily tree covered</u>, hence they will suffer the full effects of the evening flicker”</i></p> <p>Further to this, in the proposed Condition SF2 the Measured annual duration (with limit of 10h) takes into account shielding by any structures or vegetation present. The presence or absence of trees etc, and the possibility of this changing, has been specifically covered in paragraph 75 of Simon Faulkner’s evidence in chief.</p>	
Conditions		
<p>5. Refer to proposed condition SF2, in relation to the calculation of measured shadow flicker duration for surrounding residences:</p> <p>a. How will “blocking of the sun by clouds” be determined in the proposed curtailment strategy? Specifically, how will the turbine SCADA system determine this?</p> <p>b. Consider CW recommendation: the shadow flicker assessment and mitigation strategy is updated when</p>	<p>5a. This is done by measuring the sunlight at the turbines that are causing the shadow flicker. If at the time that the shadow flicker is predicted to occur the sunlight is strong then the turbine will stop but if the sun is not strong then the turbine will not stop.</p> <p>Follow up question: is Council review of the proposed mitigation strategy implied in the Condition or should it be explicit?</p> <p>5b. Add to SF3 something like “If changes to the surrounding of a dwelling occur in the future that change the blockage of the sun then the landowner will need to advise the Councils and request an updated Shadow Flicker Assessment”.</p>	

Issue	Agreed position with reasons	Disagreements with reasons
<p>there is a change to the structures or vegetation that were relied upon to meet shadow flicker duration limits, by blocking shadow flicker from occurring at the windows of a dwelling. If appropriate, provide guidance for any condition.</p>		
<p>6. Consider CW recommendation for additional condition requiring Meridian to provide ongoing reporting to the Council to confirm that the measured duration limit is being achieved for the relevant dwellings which are over the limit for modelled duration. If appropriate, provide parameters for any condition, and any requirements for these reports.</p>	<p>We both agree that regular reporting is not required but rather would be done as and when a complaint is made.</p>	