SUMMARY OF EVIDENCE OF MARTIN GLEDHILL

ELECTROMAGNETIC FIELDS

DATED: 4th March 2024

My name is Martin Gledhill. I am a Director of Monitoring and Advisory Services NZ Ltd, which through its EMF Services division provides professional measurement and advisory services related to possible health effects of electromagnetic fields. I have worked in this area since 1990, firstly at the Ministry of Health and since late 2011 through my own company. In the course of this work I have made measurements of the electromagnetic fields around a wide variety of electrical installations, and I have also followed the health research in this area.

As part of my work in connection with this hearing I made measurements of the electromagnetic fields at a Kea Energy solar farm in the Wairau Valley. A report on those measurements is attached to my evidence. The report also considers, in section 3.3, the effect of having larger capacity components, such as those proposed for the Buckleys Road site) than those at the Wairau Valley site.

The main conclusions from that report are:

- The highest electromagnetic fields are found near the inverter skid.
- These fields would decrease to levels that comply with the relevant rules in the Partially Operative District Plan within 1 m from the inverter skid. This is not an area accessible to the public.
- The strengths of the fields decrease rapidly with increasing distance from the inverter skid.
- Because the inverter skids are located well inside the site boundary, the solar farm will make no discernible difference to fields beyond the boundary.

For electromagnetic fields to have an effect on human health, insects or other animals, two conditions must be satisfied:

- There must be an established effect (in other words, an effect that has been reproducibly identified by good quality scientific research).

- There must be an exposure of sufficient magnitude (and possibly duration) to cause the effect.

With respect to effects on the health of people in the surrounding area, the question does not arise because the solar farm will not change their exposures.

With respect to insects and other animals, the research findings are mixed (both in findings and in the quality of the research) and it is difficult to draw any firm conclusions, especially in respect of insects and animals exposed in the environment rather than in controlled laboratory conditions. If there are effects, the volume of space within which significantly elevated fields exist is limited to the small volume around each inverter skid. For this reason, even if there are established effects, the likelihood of those effects occurring appears very slight.

Some submitters raise questions about future expansion of the substation at the junction of Buckleys and Branch Drain Roads, and the overhead power lines running to and from that substation. I understand that should upgrades be necessary, they would be the subject of separate applications. Nevertheless, based on measurements I have made around many other substations and power lines I would expect electromagnetic fields from such upgraded infrastructure to comply with the relevant rules in the Partially Operative District Plan.