Sent: Thursday, December 22, 2022 9:16 pm
Subject: RE: Winterbourne Wind Farm - (EXH-50557224)

Hi Iwan,

Hope you are well.

At SEARs phase, the NSW Telco Authority had provided recommendation to relocate 3 of the wind turbines as it obstructed wireless point to point links used by emergency services organisations.

Based on the maximum WTG tip height of 230 m and blade size of 81 m, we recommend:

- **B154** – move turbine minimum 20m East from the proposed location
- B138 – move turbine 40m Northeast from the proposed location
- B139 – move turbine 120m Southwest from the proposed location

Clearances have been calculated based on Fresnel 1st zones for links UHF Link Licence: 10330342/1 and 3rd zone for microwave link licence: 10956325/2.

Let us know what is required from us going forward and how we track this suggested amendment to the project.

Kind Regards

Jay Sharma
Principal Spectrum Engineer, NSW Telco Authority

ICT and Digital Government Division | Department of Customer Service

Sent: Friday, 20 January 2023 2:06 PM
Subject: RE: Winterbourne Wind Farm - (EXH-50557224)

Hi Iwan,

In addition to my previous email, our backhaul subject matter expert has also recommended the following:

Turbine id	Approx. distance to site 10022185	Requirement
B152	582m	Move to the North, minimum 500m
B153	620m	move to the West, minimum 400m
B154	365m	move to the East 1km or to South East by minimum 650m

For Point to Point link, the exclusion zones represent areas that should be free of wind turbines

- avoid obstacles in the near field of the antennas - 1 km radius
- keep the first and 2nd Fresnel zone (and 3rd Fresnel zone for the critical communication microwave link) clear of obstacles.

The terms near field and far end describe the fields around an antenna, or more generally, around any electromagnetic-radiation source. Any large object (reflective or not), including a wind turbine, in the near field of the antenna may distort the radiation pattern of the antenna and, therefore,

should be avoided. Near-field effects are typically only experienced if wind turbines are located within several hundred metres of a transmission tower.

Reflection or scattering effects also may be a problem if wind turbines are located close to the transmitting or receiving tower for the link.

Moona Trig has two telecommunication towers, so it would be recommended to move those turbines to avoid possibly interference due to near field effects or scattering: These towers are:

- ACMA id 10022185 – 2 microwave links (NSWTA)
- ACMA id 6726: 3 microwave links (NSW FRS) and 2 UHF links (Walcha Council and NSWTA)

Still the same recommendation for the turbines B138 and B139, they should be minimum 150m from the logical path of the link licence number 10330342/1. Licence: 10330342/1| UHF link between sites 6726 MNTR – 41044 Walcha

- B138 – move turbine 40m Northeast from the proposed location, or 50m to North
- B139 – move turbine 120m Southwest from the proposed location, or 140m to South

Let us know what is required from us going forward and how we track this suggested amendment to the project.

Kind Regards

Jay Sharma
Principal Spectrum Engineer, NSW Telco Authority

ICT and Digital Government Division | Department of Customer Service