Australian Government
Civil Aviation Safety Authority

AIR NAVIGATION, AIRSPACE AND AERODROMES BRANCH

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**CASA ASSESSMENT – DINAWAN WIND FARM: SSD-50725708**

CASA has reviewed the Aviation Impact Assessment (AIA) (Appendix E.9 to the EIS) by Aviation projects of 29 May 2024 for the proposed Dinawan Wind Farm.

- The proposal includes up to 200 Wind Turbine Generators (WTGs) that will be up to approximately 280 m Above Ground Level (AGL) tip height.
- There will be up to 10 wind monitoring (or similar) towers
- The WTGs are located beyond the Obstacle Limitation Surface (OLS) of the nearest certified aerodrome - Hay Aerodrome (YHAY)
- The Airservices Assessment of 3 June 2024 advises that wind farm will affect the W419 air route and will impact the published grid lowest safe altitude (LSALT)
- Aeroplane Landing Areas: The Aviation Impact Assessment advises that Goolgumbla airfield is within the project area and Steam Plains airfield is located approximately 3.9 nm south of project area.

The AIA and this CASA assessment consider the *National Airports Safeguarding Framework (Guideline D)*.

According to Visual Flight Rules (VFR) operations, pilots are permitted to fly as low as 500 ft AGL (ie, terrain). The maximum height of the WTGs is approximately 280 m (919 ft) AGL.

Except for Recommendation 8 '*Lighting of WTGs'* which defers to the risk assessment (page 44-46), CASA agrees with the Recommendations at Section 12 (page 58/59) of the Aviation Impact Assessment.

Contrary to Recommendation 8, CASA considers the proposed wind farm will be a hazard to aviation safety and recommends that the wind farm is obstacle lit with steady medium-low intensity red obstacle lighting in accordance with the National Airports Safeguarding Framework Guideline D '*Managing the Risk of Wind Turbine Farms as Physical Obstacles to Air Navigation'* National Airports Safeguarding Framework Principles and Guidelines (infrastructure.gov.au) and section 9.31 of Part 139

Aerodromes Manual of Standards Part 139 (Aerodromes) Manual of Standards 2019 (legislation.gov.au) (lower level lights on the turbine support columns are not essential).

International standards require 2,000 candela lighting intensity on the nacelle (also recommended in the NASF guideline) and 200 candelas at the mid-point of the turbine mast. CASA recommends that 200 candela as a minimum intensity lighting on the nacelle would suffice (due mainly to the lack of background lighting in the vicinity of the turbines). The obstacle lighting should be monitored to alert the wind farm operator of any outage and at least some of the obstacle lights remain on during an outage. CASA is prepared to review a lighting plan that indicates which turbines are proposed to be lit.

As the Aviation Safety regulator, CASA does not consider the visual impact of obstacle lighting on neighbours / homesteads. However, there are mitigations for visual impact such as baffling and intensity control (as described in the Aviation Impact Assessment Table 11 / Page 56 'Effect of obstacle lighting on neighbours').

Further to Recommendation 12, and as recommended by the Aerial Application Association of Australia, CASA recommends that the following Australian Standard be considered regarding overhead transmission lines:

- AS 3891.2, Air navigation — Cables and their supporting structures — Marking and safety requirements, Part 2: Low-level aviation operations.

The impacts on lowest safe altitudes (LSALT) are covered in Aviation Impact Assessment Section 5.5 Consultation and Section 11 Conclusions but not specifically included in Section 12 Recommendations. The Airservices assessment of 3 June 2024 advises:

- The W419 LSALT between VINOP and MAKIV will need to be increased to 2300ft
- The Grid LSALT will need to increase to 2300ft

The proponent (or the proponent's Aviation Consultant) should engage with Airservices Australia regarding the changes to the LSALTs.

Yours sincerely

David Alder

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