

31 March 2022

John Irving
Principal Planning Officer
DAAT – Planning Group
Department of State Development, Infrastructure, Local Government and Planning
PO Box 666, Townsville City, QLD 4810

Dear John,

RE: CHALUMBIN WIND FARM – RESPONSE TO ADVICE NOTICE

This letter provides a response to the matters raised in the SARA Information Request (IR) dated 24 February 2022 for the Chalumbin Wind Farm (the Project) (SARA reference 2112-26517 SDA).

The issues and actions from the Advice Notice, and corresponding responses, are provided in the table below. Note – items were not consistently numbered throughout the Advice Notice, but are chronologically numbered in this response for ease of reference.

Issue No.	Issue, Action and Response
1. Clearing Native Vegetation	<p>Issue: The Ecology Assessment Report (EAR) Figures 6-1: Sheets 1 - 8 show the Ground Truthed Regional Ecosystems within the Project Area, including the Project Footprint (areas of disturbance). The ecological survey on which these plans are based has not been provided.</p> <p>Action: To enable an assessment of the proposal against PO23 of State code 16 based on the Ground Truthed Regional Ecosystems, provide the following:</p> <ul style="list-style-type: none">the data obtained during the ecological survey, including on-ground photos and/or transect dataa kml/shapefile of the updated regional ecosystem mapping. <p><i>Note: if this information is not provided or the data is insufficient to change the mapped regional ecosystems, the assessment will use the regional ecosystems mapped within the Vegetation Management Regional Ecosystem Map version 12.0.</i></p> <p>Response: The ground-truthed regional ecosystem (GTRE) data and associated quaternary assessment data was provided to the Department of Resources in 2021 as part of the relevant purpose application under Section 22 of the <i>Vegetation Management Act 1999</i> (VMA); this was a precursor to lodging an application for material change of use (MCU) under the <i>Planning Act 2016</i>. Notwithstanding this, a copy is also provided to SARA in conjunction with this letter.</p>



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2. Flora and fauna	<p>Issue: The species database search undertaken to inform the EAR occurred in May 2021, more than six months prior to the submission of the EAR. Species status may have changed during this time. As an example, the Greater Glider is now listed as endangered, as of November 2021.</p> <p>Action: Provide an updated EAR based on current species database searches.</p> <p>Response: The species database search was undertaken in May 2021 was undertaken at the time of preparing and lodging the relevant purpose application under Section 22 of the VMA, as described in the response to item 1. The timeframe associated with the Department of Resources assessments delayed the lodgement of the application for MCU under the <i>Planning Act 2016</i>. Notwithstanding this, updated database searches are included within the revised Ecological Assessment Report (EAR) (provided as Attachment 1 to the Information Request response).</p> <p>It should be noted that the northern greater glider (applicable to this Project) is listed as Vulnerable, while the south-eastern and central greater glider species are listed as Endangered.</p>
3. Flora and fauna	<p>Issue: A review of the Bird Utilisation Survey (BUS) effort within the EAR has identified the following inconsistencies:</p> <ul style="list-style-type: none">• 28 person hours repeated over 2 seasons (assumed 56 hours total) on page 46• 180 person hours on page 49• 20-minute surveys repeated once in the morning and once in the afternoon for each turbine location. It is unclear if this was repeated on additional days to account for the total survey time of 1680 minutes. <p>Action: Provide an updated EAR to clarify the BUS effort.</p> <p>Response: The text in Section 4.2.3 of the revised EAR (Attachment 1 of the Information Request response) is amended to be clearer in relation to the BUS effort. The section has also been updated to reflect the increased effort incorporating the January 2022 BUS completed after lodgement of the development application, as part of the broader BUS program for the Project. Total BUS survey effort is extensive, involving 84 person hours over 3 seasons.</p> <p>With respect to the last bullet point, the calculations are as follows:</p> <ul style="list-style-type: none">• 2 people x 20 minutes x 2 site surveys (1 morning, 1 afternoon) x 21 survey sites = 1,680 minutes.
4. Flora and fauna	<p>Issue: The preliminary Bird and Bat Management Plan within the EAR does not include sufficient information to undertake a detailed assessment.</p>



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	<p>Action: Provide an updated Bird and Bat Management Plan which includes the following:</p> <ul style="list-style-type: none"> • a summary of the operational risk to bird and bat • information to demonstrate whether collision risk modelling is appropriate • information to qualify when low wind speed curtailment or turbine shut down is an appropriate mitigation. <p>Response: The Preliminary Bird and Bat Management Plan (BBMP) submitted in December 2021 as Appendix F to the EAR is sufficient and includes the information requested in Section 5 “Bird and Bat Risk Assessment”. This Section describes the risk assessment methodology and presents the results of the risk assessment for each bird and bat species known or considered likely to occur within the Project area (Table 5.3). The primary potential hazards assessed in Table 5.3 are collision with turbines, towers and powerlines, and displacement and barrier effects – these are considered the key operational risks to birds. For bats, the risk of barotrauma is also considered (as a potential direct impact, as explained in Section 5.1). Collision risk modelling is not considered necessary at this time. Of the 46 bird and bat species identified as potentially occurring in the Project area, 6 birds and 6 bats have been assigned a collision risk rating of low, and 1 bird and 1 bat species have been assigned a collision risk rating of moderate (sarus crane and spectacled flying-fox, neither of which have been recorded within the Project area in over a year of field surveys). All other species are assessed as having a negligible collision risk. The impact triggers and decision-making framework described in Section 8 of the BBMP describes the adaptive management framework through which impact triggers (e.g. mortality of a threatened bird or bat species due to collision with a wind turbine) may lead to operational curtailment.</p>
5. Flora and fauna	<p>Issue: The submitted EAR does not provide sufficient assessment of impacts to the Greater Glider.</p> <p>Action: Provide an updated EAR including the following:</p> <ul style="list-style-type: none"> • the description of suitable habitats as ‘large’ hollows, including what quantifies as a large hollow and provide supporting information/evidence for any conclusions • supporting evidence to verify the assumption that trees less than 20m in height will not support hollows for Greater Glider and that preferred habitat is within 50m of a mapped watercourse • clarification when wildlife crossing infrastructure will be installed, noting that the EAR acknowledges clearing less than 100m wide will likely act as a barrier to this species • inclusion and consideration of wildlife crossings as a species-specific measure for the Greater Glider <p>Response: Section 8.20 of the revised EAR (Attachment 1 of the Information Request response) provides additional information and reference sources relating to the definition of ‘large’ hollows and the</p>



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	<p>trees that are most likely to support them. Additional clarification has been provided in relation to the mapping of preferred habitat for northern greater glider including the results of field assessments that have been undertaken since submission of the original EAR.</p> <p>The new Appendix G to the revised EAR provides further detail on the mitigation measures for northern greater glider that will be incorporated into the rehabilitation stage of the Project, including the retention and use of hollow stags and the use of wildlife crossing infrastructure such as glider poles.</p>
6. Flora and fauna	<p>Issue: The submitted EAR in Table 5.4 identifies that koalas were recorded in the study area, however, they have not been identified on Figure 5.4 – Threatened Fauna Records within the Study Area. The EAR also does not identify which diverse, densely structure Eucalypt communities were identified as preferred habitat for koalas in Section 8.4 / Figure 8.4 – Koala Habitat.</p> <p>Action: Provide an updated EAR:</p> <ul style="list-style-type: none"> • showing in Figure 5.4 the locations koalas were identified within the study • amending Section 8.4 and Figure 8.4 to identify diverse, densely structured Eucalypt communities within the Project Area. <p>Response: The original EAR contained information on the diverse, densely structured Eucalypt communities not limited to riparian zones that would be considered potential habitat for koala</p> <p>The updated EAR (Attachment 1 of the Information Request response) includes an updated Figure 5.4 that includes the historical records of koala within the Study area. In actuality, none of the Regional Ecosystems that have been mapped and ground truthed within the Project area have a structure category of 'dense' as defined in the Regional Ecosystem Description Database (REDD). Structure categories instead ranged from very sparse to mid-dense and these were not considered to be preferred habitat for koala but were instead mapped as potential habitat. The text in Section 8 of the revised EAR has been updated to reflect this.</p>
7. Flora and fauna	<p>Issue: No supporting information, including habitat mapping has been provided for the Lumholtz tree-kangaroo.</p> <p>Action: Provide supporting information and updated habitat mapping for the Lumholtz tree-kangaroo.</p> <p>Response: Supporting information, including habitat mapping for the Lumholtz tree-kangaroo was included in Section 8.8 of the original EAR previously submitted to SARA.</p> <p>Notwithstanding this, Section 8.19 of the revised EAR (Attachment 1 of the Information Request response) describes the type of habitat that has been mapped for Lumholtz tree-kangaroo across the Project area as "rainforest, riparian vegetation through primarily open forest habitats and wet</p>



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	<p>sclerophyll forests". These habitats are mapped in Figure 8-19 within the revised EAR, along with the location of a camera trap observation.</p>
<p>8. Acoustic amenity</p>	<p>Issue: The following issues have been identified with the submitted Noise Impact Assessment (NIA) report:</p> <ul style="list-style-type: none"> • wind data was measured during the monitoring period and sheared up to a height of 150m above ground level. No further details have been provided regarding the location or type of wind monitoring undertaken and wind monitoring heights • the photographs provided of equipment in-situ are from a single direction only. It is not possible to identify the monitoring equipment in relation to the surroundings • background noise monitoring was completed at a single location (Host Lot on the Doyle property). The assessment justifies this due to the sparsely located sensitive land uses and the distance to these land uses being sufficient to characterise the existing noise environment. This might be acceptable for HLK & NHL2, however, NHL3 is likely to have differing background noise levels being positioned on an exposed ridgeline and bush setting as opposed to a cleared river valley. Noting that the highest predicted noise level at NHL3 of 32 dBA is below the minimum 35 dBA criteria, therefore its compliance is not contingent upon background noise level • rainfall data was obtained from the nearest Bureau of Meteorology weather station, at Mareeba. The data has been used to exclude periods when local weather may have adversely affected the background noise measurement data. Mareeba is approximately 80 km from the baseline noise monitoring location and hence it is unlikely to be representative of local rainfall conditions. It is considered best practice to deploy a local weather station capable of measuring both local wind conditions as well as local rainfall • the noise monitoring data is presented as a regression only, the assessment should provide a time history of the noise monitoring data for context as it is not possible to ascertain if data includes extraneous noise sources • there is no evaluation of the typical ambient noise environment (e.g. wind in trees & foliage, insects, birds, frogs, domestic sources etc.) • the assessment describes that data points corresponding to any periods of measured rainfall and/or measured wind speed exceeding 5 m/s at the microphone for more than 90% of the measurement period. Whilst most standards are not prescriptive, it is more typical to apply a threshold of 5 m/s average wind speed (e.g. 50% of the measurement period) • the assessment derives criteria based entirely upon the background noise regression curves, which are particularly high due to what is presumed "non-wind related noise sources". The resulting night-time criteria are typically >40 dBA which is higher than the minimum applicable for host lots. In light of the potential variability of these "nonwind related noise sources" the monitoring and/or analysis should remove such influence, or alternatively, the minimum noise criteria of 37 dBA (day) and 35 dBA (night) should be applied • the predictions are based on sound power levels of a Vestas V162 6.0MW. The evaluation does not include the potential for Special Audible Character. Typically, it is best practice to evaluate for the potential for tonality based upon narrow band analysis in accordance with



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	<p>IEC61400-11. If a penalizable tone is present then that should be 'built in' to the wind farm noise prediction.</p> <p>Action: Provide an updated NIA report that addresses / includes the following:</p> <ul style="list-style-type: none"> • details of the location and type of wind monitoring undertaken and wind monitoring heights • additional photographs of the equipment in-situ from alternate / multiple directions • background noise monitoring for NHL3 • use of a local weather station to measure local wind conditions and rainfall for use in that data analysis • a time history of the noise monitoring data • an evaluation of the typical ambient noise environment • apply a threshold of 5 m/s average wind speed (e.g. 50% of the measurement period) to the data points for any periods of measured rainfall and/or measured wind speed exceeding 5 m/s at the microphone • monitoring and/or analysis should remove non-wind related noise sources or alternatively, the minimum noise criteria of 37 dBA (day) and 35 dBA (night) should be applied • if present include penalizable tone into the wind farm noise prediction. <p>Response: The Project's acoustic consultants, Sonus, has reviewed the information requested and notes that many of the requests listed above are not material to the assessment of the Project under State Code 23. Nevertheless, Sonus has prepared a letter addressing each of the matters raised in this Advice Notice (refer Attachment 1).</p> <p>With respect to the suggestion that additional noise monitoring is required due to the position of NHL3 on an exposed ridgeline, it should be noted that Sonus has conducted several background noise monitoring campaigns in this region and the dominant noise source for each has been insects, irrespective of the time of year. Therefore, although background noise levels are strongly dependent on elevation and proximity to tall trees in some areas, this is less critical in the Project area. Further, if there is any influence of the "exposed ridgeline and bush setting" on the background noise levels, it would be to increase the background noise levels and the associated criteria. On the basis of the source of background noise and the large margin between the predicted noise levels and criteria for NHL3, no further monitoring is considered to be warranted in accordance with State Code 23.</p>
9. Third party advice – Powerlink	<p>Powerlink requires a separation distance between the centre of the turbine / MetMast to the edge of the easement to be greater than the height of the turbine / MetMast between the ground and the highest point of the turbine / MetMast.</p> <ul style="list-style-type: none"> • The location of wind turbine 48 is approximately 235m from the centre of the turbine edge to the easement. As the overall height of the turbine is 250m ,the separation requirement cannot be met.



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	<ul style="list-style-type: none"><li data-bbox="336 331 1469 398">• The location of MetMast 8 is approximately 25m from the edge of the easement. As the overall height of the mast is 170m, the separation requirement cannot be met. <p data-bbox="336 456 464 490">Response:</p> <p data-bbox="336 492 1469 806">The proponent notes the separation distance requirements identified by Powerlink Queensland for turbines and met masts associated with the Project. It must be noted that at this stage the final dimensions of the wind turbines and the permanent met masts are not confirmed. These details will be finalised in the detailed design process and the proponent proposes a development permit condition that requires the separation distance from the centre of the wind turbines and met masts to the edge of the easement to be greater than the height of the turbine or met mast between the ground and the highest point of the structure. This will allow appropriate micro-siting to confirm this separation distance is complied with when the specifications of the wind turbines and met masts are better understood.</p>

I trust that this adequately responds to these matters.

Please contact me on the details below if you would like to discuss any aspect of this letter.

Yours sincerely,

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