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26 March 2015

The Chair
Planning Assessment Commission
GPO Box 3415
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Dear Commissioners

FURTHER RESPONSE: YASS VALLEY WIND FARM

Following our recent correspondence and the site visit and meeting on 4 March 2015, we write to provide further information.

We have previously provided the following in response to the Secretary's Environmental Assessment Report of 28 Jan 2015:

- An Initial Response dated 13 Feb 2015;
- A Detailed Submission dated 27 Feb 2015.

The earlier information we have provided addresses the areas raised in the Secretary's assessment, namely, clarity in project description, consistency, constructability, aviation and biodiversity.

This Further Response presents:

- commentary on the feasibility of each precinct to be constructed independent of the 330kV transmission connection option, including reference to alternative grid connection points, the scale of the project and RET uncertainty;

- the reports of independent experts on noise and landscape and visual impact, reviewing the impacts of the final layout and considering properties previously "involved" and now "non-involved" as foreshadowed in our Detailed Submission;

- additional biodiversity assessment which has been carried out following the site meeting, including a description of the key biodiversity impacts by precinct, the application of the BioBanking Assessment Methodology, detailed site vegetation mapping and a detailed outline of the revised offset strategy including a preliminary calculation of offset requirements determined using the BioBanking Assessment Methodology;

- a map showing changes to the project over the course of the assessment process including a updated schedule of the changes to include cross-referencing to the map; and

- an updated Statement of Commitments, reflecting our commitment to use the BioBanking Assessment Methodology in determining biodiversity offsets for the project.

1. INDEPENDENT CONSTRUCTABILITY OF PRECINCTS

We have preciously outlined the constructability of each precinct. In summary, the Coppabella precinct and Conroys Gap Extension / Marilba East precincts can each be built independently and are each technically and financially feasible, though it is likely that the Marilba West precinct would only be feasible if other precincts proceed.

Access to and across each precinct is independent of the others. Each precinct has an ability to connect at 132kV, and the 330kV connection is not required for the first precinct to move to construction. However, if all precincts are built at the same time it is likely that the 330kV connection would be the best overall solution. The 330kV powerline would also maximize the megawatt capacity that could be installed at the site, potentially allowing wind turbines with higher-capacity generators to be used. Given the excellent wind resource across the site, the construction of the 330kV line is reasonable and feasible. Market conditions, particularly in relation to the Renewable Energy Target, would guide the timing of the construction of the 330kV transmission line.

Land access

The timing of landowner agreements is a commercial risk for the proponent. A landowner on the 330kV line corridor who wishes to be considered "involved" has consistently stated he will finalize the land tenure agreement closer to the time when the land is required. The landowner appreciates that the timeframe for the requirement to construct the 330kV line cannot be stated with any precision, particularly in the current wider context of the Renewable Energy Target (see below). As the planning process for the wind farm has been protracted this landowner's position is considered acceptable from a commercial point of view and his position has been reconfirmed throughout the development.

132kV connection options

Two 132kV network connection paths are available to the project:

- (Northern 132kV connection) The existing 132kV Yass – Murrumburrah powerline owned by Transgrid and located to the north, running across both Coppabella and Marilba precincts; and

- (Southern 132kV connection) Two adjacent 132kV Yass – Wagga powerlines ("970" and "990" feeders) owned by Transgrid to the south of Conroys Gap Extension.

Grid connection design work has commenced with Transgrid in relation to the northern connection. Transgrid has entered into a connection agreement for 100MW to the 132kV at the northern boundary of the Coppabella precinct. The size was limited to 100MW for the purpose of a recent tender process. A further 50MW of capacity has been indicatively assessed to be available based on the technical studies and is expected to be added to the existing connection agreement. Further connection capacity may also be available depending on connection arrangements however these have not yet been explored. We therefore anticipate at least 150MW can be transferred to the northern 132kV connection.

Grid connection design work has also commenced with Transgrid in relation to the southern connection, though no connection agreement is yet in place. A similar level of connection capacity is expected to be available to the first feeder under investigation (990 feeder), with the potential for this to increase if connections to 970 feeder are also used. We therefore anticipate 150 – 200MW can be transferred to the southern 132kV connection.

330kV connection option

The 330kV connection option would lead to a significantly larger connection capacity, allowing larger capacity wind turbines to be used on site. For example, at 124 turbines the 132kV connections would be near their limits if 2.5MW turbines were used, whereas the 330kV connection could allow wind turbines with generators larger than 2.5MW. The 330kV connection would also result in lower energy losses in the transmission system and, if all precincts were built at the same time, would likely result in a lower connection cost and therefore improved viability.

Renewable Energy Target

We note that the current period of uncertainty over the Renewable Energy Target started in about September 2013 and is ongoing. Prior to September 2013, Yass Valley would likely have been built as a single large project. Even when stability is restored to the RET, confidence will take longer to return and there is now a greater likelihood that the project would proceed one precinct at a time. This cannot be determined at this point and therefore both options have been contemplated in the connection arrangements for the wind farm.

Clarity in project description, consistency

The project has been presented in maps in each document submitted to the Department and to the PAC. Changes have been made throughout the planning process to respond to issues raised by minimising the impacts of the wind farm. The changes are documented in Annexure C of our Detailed Submission.

To assist in understanding the changes made Annexure C has been visually represented on a map which is presented as Attachment 4 to this submission.

2. AVIATION

At the pre-approval stage there is a requirement to determine whether impacts are acceptable or can be mitigated. Epuron and the previous proponent of the project, Origin Energy, have both undertaken aviation impact assessments.

Epuron has engaged three different consultants to undertake radar impact analyses covering different aspects of the issue. These radar investigations have clearly indicated that:

- it is possible that the wind turbines related to the project may impact on the operation of the Mt Majura PSR/SSR Air Traffic Control radar and/or Mt Bobbara SSR Air Traffic Control radars;
- as a result, a final radar impact assessment should be carried out in consultation with Airservices and prior to construction to determine what if any mitigation is required;
- mitigation options are available should they be required (including modifications to radar software or hardware; modification to operating procedures; or removal or relocation of specific wind turbines); and,
- the cost of any mitigation required would be commercially feasible in the context of the project capital investment.

Airservices agrees that a more detailed design investigation is required prior to construction of the wind farm. To carry out the investigation to Airservices' satisfaction requires the final turbine locations, height, design and materials to be known. These details can only be determined once the final wind turbine manufacturer and model is chosen, and this can only occur after project approvals have been granted.

When this final detailed assessment is undertaken it will be possible to present options for mitigation which include:

- minor relocations to the positions of individual turbines
- removal of wind turbines
- amendments to radar software
- amendments to radar hardware.

By way of example, as new high rise buildings are built in Sydney and Canberra which impact radar coverage one form of mitigation used is to make adjustments to radar software which enables the position of the new structure to be an acknowledged spatial block around which the radar detects moving objects. This software adjustment is one option for the wind farm. However, beyond that approach, radar coverage is constantly being monitored and updated with the installation of updated software, hardware and the installation of new radar locations. All of these options are reasonable and feasible for the wind farm.

Epuron considers that this matter is currently adequately addressed in the standard and model conditions which state:

> ***Aviation Obstacles and Hazards***
> *B1.* ***Prior to the commencement of construction, the Applicant shall consult with****:*
>
> *a)* *…*
> *b)* ***AirServices Australia, to determine potential impacts on instrument approach procedures at aerodromes, navigational aids, communications and surveillance facilities; and***
> *c)* *...*
>
> ***Mitigation measures for each of the potential impacts and hazards identified in a) to c) above, shall be determined in consultation with the respective groups identified in this condition, prior to the commencement of construction.***

These principles have been reflected in our Statement of Commitment 28.

Agricultural aviation has been addressed by way of conditions. At all other wind farms the application of the standard and model conditions is considered a reasonable and feasible way to address impacts which may result from the wind farm proposal.

3. NOISE IMPACT ASSESSMENT

We attach the updated assessment of the noise impacts *"Yass Valley Wind Farm – Noise Assessment revised layout and landowner status"* by Marshall Day Acoustics (Attachment 1). This assessment has been updated to reflect the final Project Layout (as described in section 4.1, Detailed Submission) and to assess all properties that were previously classified as "involved" and are now "non-involved".

The assessment includes details of noise levels at relevant receivers for a range of wind conditions (in the tables in Appendix B to the report), and a noise contour map is included as the final page.

The summary of the attached noise impact assessment states *"This assessment demonstrates that the proposed reduced layout can viably operate within the noise limits which would apply to the project, accounting for the change in status of some receiver locations as a result of the layout changes."*

4. VISUAL ASSESSMENT

We have enclosed, as Attachment 2, an updated assessment "*Yass Valley Wind Farm Landscape and Visual Impact Assessment – Response to Secretary's Environmental Assessment Report*" by Environmental Resources Management Australia Pty Ltd which updates the previous landscape and visual impact assessment to reflect the final Project Layout. This assessment includes:

- A review of the previous assessment of "non-involved" properties in relation to the final Project Layout;
- An assessment of "non-involved" properties which were previously classified as "involved";
- Updated photomontages which reflect the final Project Layout; and,
- A response to issues raised in the Assessment Report in relation to methodology, as well as a response to the findings of the RLA Report to which the Assessment Report refers.

In its conclusion, the updated landscape and visual assessment report states *"the overall level of visual impact of the proposed wind farm on the surrounding residents and communities remains acceptable."*

5. BIODIVERSITY

The site has been the subject of a number of detailed biodiversity surveys over a period of seven years and accordingly the risks and potential impacts are well understood. The assessment process and iterative layout development have reflected the requirement to avoid impacts as much as possible, minimise impacts where avoidance is not possible and offset residual impacts to achieve a *'maintain or improve'* biodiversity outcome.

In order to address the points discussed at the site meeting, an additional biodiversity assessment report has been completed by experts NGH Environmental. This report *"Biodiversity Risks, Impacts and Offsets"* (the **NGH Report**) is included as Attachment 3. The NGH Report clarifies the approach to biodiversity assessment and offsets in particular.

The key biodiversity risks are summarised, by precinct, in Table 2-1 of the NGH Report, which also summarises the mitigation strategies adopted.

The Proponent has focussed on the '*avoid, mitigate, and offset'* approach. Infrastructure changes have taken place over the course of the project's development to achieve these aims including a notable reduction in turbine numbers to avoid sensitive areas. Biodiversity risks have been avoided and reduced, in that clear strategies have been developed to confirm assumptions and build in a precautionary approach to managing the construction and operational impacts. Appropriate micrositing of infrastructure will act to reduce biodiversity impacts further. The Statement of Commitments contains a number of additional measures (SOC 11-21, 104, 105) designed to mitigate impacts and also manage any uncertainty with respect to overall impacts.

Offsets and BioBanking Assessment Methodology

The BioBanking Assessment Methodology has been committed to by the Proponent for the determination of offset areas – see SOC 18 in the revised Statement of Commitments.

To confirm that suitable offset areas are achievable, a preliminary analysis of the remaining biodiversity impacts, offset requirements, and identification of offset areas has been carried out using the BioBanking Assessment Methodology.

The total impact area of the Project was found to be 226.4ha (approximately 1% of the site area), with the primary impacts being to Box Gum Woodland (in various conditions from poor to good) and Box Gum Woodland Derived Grasslands. Impacts to additional vegetation communities are outlined in the attached biodiversity report.

In the NGH Report, the BioBanking Assessment Methodology (BBAM) is used to determine the preliminary offset requirements based on sample biometric data from site surveys. The BBAM credit calculator resulted in an effective ratio for offsetting of native vegetation of 1:1.3.

The BioBanking Assessment Methodology also takes into consideration threatened species. Accordingly, additional calculations were carried out with respect to Golden Sun Moth habitat and Regent Honeyeater habitat. Where the native vegetation offsets are less than the threatened species habitat requirement, additional habitat must be included in the offset areas to address these threatened species.

The BioBanking Assessment Methodology is complex, and requires detailed biometric data of both the impact area and offset areas. Once known, the construction layout will enable final biometric data to be collected for all impact and offset areas. Until the project reaches that point, NGH Environmental considers a more conservative offset ratio of 1:3 be assumed to ensure sufficient offsets are available.

The BioBanking Assessment Methodology addresses native vegetation and threatened species, but does not adequately address hollow-bearing trees in the landscape. Accordingly, a separate assessment is required to confirm if the offset area selected (to address BioBanking requirements outlined above) provide sufficient offsets for hollow-bearing trees. OEH requires that hollow-bearing trees affected by turbines should be offset in a ratio of 1:10, accordingly this ratio has been adopted to carry out a hollow-bearing tree assessment and offset calculation.

The hollow-bearing tree impact analysis is included in the NGH Report to clearly address the issue for the PAC, and is summarised below.

Preferred offset areas

The attached biodiversity assessment describes the approach to selecting offset areas (section 3.8), namely that offset areas are located on the site, a reasonable distance away from proposed infrastructure (300m buffer to turbines; 50m buffer to other infrastructure) and are generally larger areas with high quality native vegetation as well as a buffer of lower quality native vegetation which can be improved.

By applying these criteria to the 4,108ha of identified potential offset area (available area) a number of preferred sites has been identified with a total area of 1,710ha. These areas are outlined in the NGH Report which also indicates their location on an attached map (Appendix G, map 4, in the NGH Report).

Preliminary offset results

Through the biodiversity assessment process, an area of 8,452 ha representing more than 60% of the site has been assessed for vegetation type and condition. Some of this assessment pre-dates BioBanking and does not include all biometric data required to complete a final calculation using the BioBanking Assessment Methodology, however it is adequate to determine the likely level of offsets required and confirm whether or not these are available.

More than 80% of the site survey area is *Box Gum Woodland* or *Box Gum Woodland Derived Grassland* ranging from poor to good condition. Generally this is previously cleared farm paddocks with some isolated remnant vegetation, though some areas of higher quality vegetation remain.

Across the entire development, a total of 226.4 ha will be affected, with the majority of this impact area being *Box Gum Woodland* or *Box Gum Woodland Derived Grassland*. Across the entire site only:

- 52 ha of moderate-good condition *Box Gum Woodland* is impacted out of a total of 3,825 ha (approx. 1.2%); of this impact area, only 3.4 ha is in the highest condition class of moderate-good with high diversity, and
- 120 ha of moderate-good condition *Box Gum Woodland Derived Grassland* is impacted out of 2,580 ha.

The vegetation community on more than 80% of the site is the *Box Gum Woodland / Box Gum Woodland Derived Grassland*. A summary of the impacts, offset requirements (determined using the BioBanking Assessment Methodology) and offsets available is outlined in Table 5-1. This table also outlines the offsets available in the preferred offset areas identified, further offsets are available elsewhere on site should these be required. Further detail including a breakdown of all vegetation communities is in the attached NGH Report.

Table 5-1 Box Gum Woodland impacts and proposed offsets (in hectares)

	Conroys Extension	Coppabella	Marilba	330kV Trans-mission	Total
BGW & BGW Derived Grassland EEC Impacts Table 3-2 NGH Report	24.7	67.3	38.3	70.3	200.6 ha
Offset requirement from BioBanking Assessment Methodology Table 3-6 NGH Report	31.7	33.3	43.4	101.2	209.6 ha
Offset requirement assuming conservative offset ratio of 1:3	74.1	201.9	114.9	210.9	601.8ha
Offset available in preferred offset areas Table 3-8	158.4	462.6	384.2	22.8	1027.9 ha

We note all turbine areas have sufficient offsets within them for their own offset requirements. In addition, sufficient offsets are available within the turbine precincts to offset impacts resulting from the 330kV transmission connection.

Importantly, a high portion of the preferred offset areas is classified as "moderate-good condition with high diversity" and therefore this provides a "like for better" offset which under the BioBanking Assessment Methodology is likely to reduce the overall offset area required. Approximately 450ha of this highest condition *Box Gum Woodland* is available in the preferred offset areas.

Hollow-bearing trees (HBT)

To analyse impacts on hollow-bearing trees a consistent methodology, developed in consultation with OEH, has been applied to determine the number of trees impacted by a wind turbine and the number of trees available within the offset areas. Table 5-2 shows the number of HBT potentially impacted and the number of HBT which can be offset in the identified offset areas by precinct.

The offsetting ratio of 1:10 for HBT is achievable across each precinct and across the site.

Table 5-2 Hollow-bearing tree assessment summary

	Conroys Extn (18)	Coppabella (79)	Marilba (27)	Total (124)
Total no. of HBTs within 100m of a wind turbine	32	251	51	334
HBTs in Preferred offset areas	579	3,419	1,777	5,855

Landowner involvement

Until the final impacts are known and final offset plans are developed in consultation with OEH the offsets cannot be finalized. However, involved landowners have reiterated, in writing, their willingness to negotiate offsets across the site, as well as on their land outside the wind farm boundary.

Summary

Over the course of the development of the wind farm, impacts to biodiversity across the site have been identified, assessed, avoided, minimized and the residual impacts quantified. Offsets are quantifiable and a preliminary calculation of offset requirements has been undertaken using the BioBanking Assessment Methodology. Impacts would be further minimized at detailed design and final offsets would be calculated using the BioBanking Assessment Methodology to which the Proponent commits.

6. UPDATED STATEMENT OF COMMITMENTS

A Statement of Commitments was provided in our Initial Response. We have updated SOC 18 to confirm the commitment to use the BioBanking Assessment Methodology in determining offset requirements.

An updated Statement of Commitments is attached.

7. SUMMARY OF RESPONSES

The issues raised in the Assessment Report as justification for refusal have been addressed.

The iterative nature of the development of wind farms is reflected in the Department's Standard and Model Conditions, all of which deal reasonably and consistently with the issues raised in the Secretary's Report.

The following documents have been provided to PAC provide further information to address concerns raised:

- The Initial Response 13 February 2015
- The Detailed Submission 27 February 2015
- Large-format map and photomontages provided at the site visit on 4 March 2015 (the map was extracted from the Initial Response and the photomontages from the Detailed Submission)
- This Further Response which includes reports on Noise, Visual Impact and Biodiversity risks, impacts and offsets package.

The Secretary's Assessment Report did not recommend refusal as a result of identified and unacceptable impacts. Rather, it expressed a view that the information provided previously did not reasonable demonstrate that the various environmental issues were adequately and consistently assessed and, accordingly, the Department was not (in its opinion) in a position to recommend approval.

We have previously outlined the reasons why we consider the Department's position to be flawed.

Epuron believes that provision of significant additional information through our various submissions to PAC thoroughly and completely address the issues raised in the Assessment Report. This information includes:

- details of the final Project Layout showing final infrastructure locations;
- a final Statement of Commitments including a significant number of additional commitments in response to issues raised in the Assessment Report;
- details on the constructability of the project including on a precinct by precinct basis;
- clarification of the "involved" and "non-involved" landowners, and additional noise and visual assessments in relation to those landowners who have changed from "involved" to "non-involved";
- a response to the concerns around impacts to aviation including a commitment to undertake a final radar impact assessment and implement any mitigation required in accordance with Airservices Australia requirements;
- confirmation that EPBC approval has been granted for the entire project;
- detailed responses to the outstanding questions raised in relation to biodiversity, and in particular in relation to:
    - our extensive efforts to minimize avoid, minimize, mitigate and offset impacts to biodiversity;
    - the provision of updated and clear vegetation mapping;
    - additional information regarding impacts to hollow bearing trees;
- an updated offset strategy including confirmation of our commitment to use the BioBanking Assessment Methodology; further analysis of offset requirements in line with that methodology; clear demonstration that sufficient offsets are available on site; and a commitment to create a biodiversity offset setback around wind turbines;
- revised noise and visual impact assessments which address the final layout and, in particular, the impacts to those landowners who have changed from "involved" to "non-involved"; and,
- a complete set of photomontages based on the final Project Layout.

None of the impacts of the Project have been determined to be unacceptable by the independent experts appointed by Epuron, or by any government agency.

No government agency has objected to the approval of the Project, and the most have provided draft consent conditions that they would prefer to see included in an approval. Epuron accepts all of these conditions and where appropriate has adopted them into its Statement of Commitments.

The Project is not contentious in the local community with only 8 objections from members of the public received during the exhibition of the Preferred Project Report. The 14 involved landowners clearly support the Project.

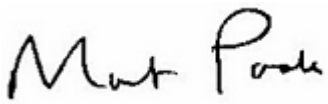
The Statement of Commitments addresses each of the outstanding points raised in relation to the assessment, and the approach taken in these Statements of Commitment is consistent with the Standard and Model Conditions which the Department applies to wind farms, and consistent with a number of recent approvals granted to wind farms.

As we stated in our Initial Response we believe that the Project, assessed on its merits, has demonstrated significantly greater environmental, social and economic benefits than the relatively minor potential adverse impacts all of which have been addressed through the planning process.

Accordingly we ask that the PAC approves the Project.

If you have further questions or issues that you consider have not been adequately addressed we are happy to address these either in person or in writing.

Yours sincerely,



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Attachments

1. "Yass Valley Wind Farm – Noise Assessment revised layout and landowner status" (including noise contour map), Marshall Day Acoustics, 26 March 2015

2. "Yass Valley Wind Farm Landscape and Visual Impact Assessment – Response to Secretary's Environmental Assessment Report" (including 42 photomontages), Environmental Resources Management Australia, 19 March 2015

3. "Biodiversity Risks, Impacts and Offsets", NGH Environmental, 26 March 2015

4. Revised table and map of project changes

5. Revised Statement of Commitments.