

File Ref: 23/046

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Muswellbrook Shire Council, 60-82 Bridge Street, Muswellbrook NSW 2333

Subject: RAI Response Letter

Dear Hamish,

I refer to the Council's correspondence dated *9 August 2023* requesting additional information regarding the DA 2023/66 lodged for the Battery Energy Storage System(BESS) at 105 Merriwa Road, Denman.

Firstly, please be advised the site layout along with the BESS design has been slightly modified since last submitted to the council. The following summarises the major changes made;

- 1. Relocation of BESS further to the northwest from the existing location.
- 2. Relocation of the proposed driveway to utilise the existing driveway.
- 3. Replacement of 2.4m high chain mesh fencing with 3m hush panel wall fencing.
- 4. Increased (10m) landscape buffer around the BESS.

These have been further explained in the below response. The following summarises the council's request and our response to it;

1. Flooding

The site subject to this development application is identified as flood liable and parts of the site are affected by the 1% AEP flood event. The issue does not appear to have been considered in the preparation of the development application. The image below from Council's mapping system provide an overlay of the 1% AEP flood events in relation to the site. Council's PMF flood event mapping indicates the entirety of the site is impacted by the PMF flood event.



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Council Officers have reservations around the location of the battery storage infrastructure on land affected by flooding. These concerns relate to:

- The understood sensitivity of the development to damage from flooding.
- The potential for any flooding damage to impact on both the facility and the energy network and the related impact of that damage in terms of disruption to energy transmission and storage.
- The potential for the facility to present a danger/hazard to members of the public and emergency response workers where it is damaged or impacted by flooding.

It is the view of Council Officers that the development application before Council does not satisfactorily address S 5.21 of the Muswellbrook LEP 2009 and that site suitability for the proposed development has not been satisfactorily demonstrated.

Where you intend to persist with an application for the facility at this location it will be necessary for you to engage a Hydraulic Engineer to prepare a Flood Impact Assessment related to the proposal. In doing so it would be necessary for the assessment to have regard to:

- The height of the 1% and PMF flood events in context with the compound siting and location.
- The finished ground level of the proposed compound and any requirement for the ground level or provide flood protection through earthworks and bunding (earthwork bunds have been installed at the adjacent electricity substation) to protect the facility from flooding by the 1% or PMF flood events to mitigate the risk of flood damage and related disruption to electricity generating infrastructure.
- Potential for any earthworks related to the adjustment of the compound floor level to increase the flood liability of adjoining property in context with the related requirements of Council's Development Control Plan.







- Relates assessments provisions under S 5.21 of the Muswellbrook LEP 2009 and the Floodplain Development Manual in relation to the proposed development.
- Any relevant flood impact considerations related to the sensitivity of the proposed use and the potential for flooding to impact on its operation or maintenance.
- Any other relevant flood impact considerations.

Where the height of the development is adjusted to respond to flooding issues consideration would need to be given to potential environmental impacts associated with this design adjustment including stormwater management, visual impacts, and fill management.

The BESS has now been moved to the north-west of the site in an area free from 1% AEP. Refer to *Attachment A – updated Site Layout Plans*.

We note that the whole site is impacted by the PMF flood event within the council's mapping, and therefore, a risk assessment has been undertaken by BMT to determine the risk during the 1% and PMF flood event. Please refer to *Attachment L – Flood Risk Assessment*.

The report concludes that the BESS pad will be flood-free during the 1%AEP as well as the PMF event. It also suggests that during a 1% AEP, monthly maintenance visits should be rescheduled once the flooding has receded. This is acceptable as the BESS will be operated remotely.

It has also been proposed in the report to move the driveway 50m to the south to reduce the hazard risk. Currently, the existing driveway is utilised to provide access to the proposed BESS. There is a scope for moving the driveway to the south, as suggested in the flood report. This can be adopted if required by the council.

The location and level of the proposed BESS have been changed from where it was initially proposed and all the plans including stormwater and earthworks are updated accordingly. Please refer to **Attachment A**, **Attachment B**, and **Attachment C** for the updated plans. The BESS has been placed at a level at or above the PMF. Visual Impacts have been determined considering the proposed height, and are detailed in *section 5* of this letter.

The major changes in the location of the proposed BESS have been described as follows;

- Relocation of the BESS to the west The proposed BESS has now been moved to the west of the site, away from the residential area as shown in *Attachment A – updated Site Layout Plans*. The side setback from the southern boundary has been increased from 22m to 84m.
- **2.** Change in driveway The previously proposed driveway has been relocated to utilise the existing driveway.

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3. Change in the fencing – The initially proposed 2.4m high chain mesh fence has been replaced by 3m high HushPanel wall fencing in Windspray colour. The walls have high acoustic performance and will act as a sound barrier, minimising the noise impact of the proposed BESS on the surrounding developments as well as providing visual screening. Refer to Attachment B – updated Compound Details and Attachment D – Hush Panel Specifications.

2. Vehicle Access

Further information is required to clarify the proposed vehicle access design for Council and Transport for NSW consideration. See the previous correspondence from Transport for NSW in relation to this point. Any vehicle access should be designed to accommodate largest construction vehicle required to access the site.

Noted.

The access has been updated to utilise the existing access to the site. Refer to *Attachment A – updated Site Layout Plans*.

A Traffic Study has also been prepared by *Intersect Traffic* providing an assessment of the proposal as requested by *Transport for NSW* under a letter dated *19 July 2023*.

Refer to Attachment E – Traffic Impact Assessment.

3. Operational Information

Provide an overview of the battery operating process and the function of the battery and additional buildings/infrastructure in that process.

Please refer to **Attachment F - Operational Information** which details the operating process and various components of the BESS and their functioning.

4. Compound Plans and Elevation

Council is interested in updated plans and elevations to provide additional details of the proposed development design and appearance. From past experience it is anticipated that the Hunter and Central Coast Planning Panel would have a similar requirement to provide more detailed design information related to the proposed development to assist in its assessment and understanding of its appearance in context with the locality. To provide improved design information for the proposed development it is requested that:

• Updated elevations are provided detailing the structures proposed within the compound rather than the outline shapes currently put forward.

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• The proposed connection/relationship to existing electricity network power line infrastructure should be included in the plan set. Where additional infrastructure or an infrastructure pathway is required to









provide a grid connection the details of that infrastructure or proposed construction pathway should be detailed.

- Perspective plans or similar conceptual images are provided to assist in considering the appearance of the proposed development and compound in the existing environment.
- It would be recommended that perspective images are provided.
- It would be in your interest to provide a plan either as part of the architectural plan set or landscape plan set which includes elevations of the compound alongside the proposed landscaping.
- Where earthworks are required to raise the height of the compound ground level outside of flood waters the extent of the fill and earthworks will need to be considered in the updated plans.

The initially submitted plans have now been updated to reflect the proposed changes as detailed under *pt. 1* of this letter.

The plans and elevations have been updated to reflect the correct survey levels.

The components of the proposed BESS being a prefabricated battery and power cabinet, the elevations only outline the size of the components. Separate specifications for each component have been included in *Attachment F* showing the indicative image of the component.

Furthermore, photomontages of the proposed BESS on the site are included in the Landscape documentation, refer to **Attachment G**. Landscape Documentation also includes the elevation of the proposed facility integrated with the landscaping, as requested above.

The earthworks required for the proposal are only in regard to the proposed pad for BESS, and open-cut trenching to carry transmission lines from the closest source to the facility. These have been further detailed in *Attachment B – updated Compound Details* and *Attachment H - Ausgrid-certified Plans*.

Please note that these earthworks for power connection have already been assessed and approved by Ausgrid.

5. Landscape Plan Detail

It is requested that an updated landscape plan is provided and that the landscaping detail is prepared or informed by landscape architects. The landscape plan should be prepared to enhance the overall appearance of the site, offset any visual impact, and improve the site appearance when viewed from public land and adjoining property.

Components of the landscape plan and proposed species should include:

- Incorporate native vegetation.
- Where possible use species that are drought resistance and can be effectively maintained.
- Provide a mix of trees, shrubs and ground cover to create a visually appealing screen of the proposed development.

Page 5 of 12





- Emphasis on providing an effective visual screen to soften the visual intrusiveness of the development for immediately adjoining residential properties south of the proposed development.
- Have regard to views toward the site from residentially zoned land to the northwest and consider and mitigating the visual impact in this direction. Noting the distance and landscape between the site and these receivers landscaping in this direction may be better focused toward providing native trees with a tall canopy height to soften industrial appearance of the compound in this direction.
- Give further consideration to the tree planting proposed at the eastern elevation between the proposed development and existing electrical sub-station. Screening along this boundary may have limited benefit to mitigating visual impact related to the proposed development. Council Officers are not concerned with screening the proposed battery from this existing sub-station.
- Have regard to any overhead power lines and related infrastructure in setting canopy heights.
- In preparing the landscape plan have regard to prominent view points toward the proposed development and demonstrate how through visual montage or similar viewpoint plans visual screening from these locations has been achieved.
- Have regard to bushfire management obligations.
- Include details related to the establishment and initial maintenance of plants to ensure that they are effectively established on the site.
- Reference ongoing maintenance obligations required to ensure the site is managed in an effective and tidy manner and does not become overgrown.
- The landscape plan will need to have regard to any site filling or contour shaping.

To address the above-raised concerns by the council, an updated Landscape documentation has been prepared by Conus Landscape Architects and is attached as *Attachment G*.

The plans consider the site configuration and provide details regarding the proposed landscaping -species, size, and maintenance schedule.

The documentation also includes the elevation of the proposed BESS along with the proposed landscaping at different growth periods ie., after 1 yr, 5yr, and full growth. It is to be noted that the proposed facility will be mostly screened with landscaping within 5 years and will not be visible at all, once the trees reach their mature stage.

Additionally, five(5) viewpoints have been selected around the site, *three(3)* to the east, one(1) to the south, and one(1) to the west. The three viewpoints (VP1, VP2 & VP3) to the east are taken to depict the visual impact of the proposed BESS on the cars/passengers traveling Golden Highway. The VP4 indicates the view from the future residential development to the west and VP5 from the present residential development to the south. Please refer to

Page 6 of 12

planning > design > developmer





pages 7 - 11 in **Attachment G.** From all the viewpoints, it is evident that the proposed BESS will be fully screened by the proposed landscaping.

Moreover, the increased setback to the southern boundary and the proposed 3m high hush panel in Windspray colour would also add to negating the visual impacts of the proposed BESS on the surrounding developments.

6. Stormwater Management

Additional consideration is required in relation to the management of stormwater across the site in context with the sites flood affection and local environment.

The current stormwater plan would locate a surface spreader outlet adjacent the adjoining residential properties south of the site. Based on the 1% flood map, submission and inspection of the site it is understood that there is a low point where water naturally runs adjacent to and toward these adjoining properties.

Where possible and pending the outcome of any flooding related design changes a more effective stormwater management outcome may be a stormwater management strategy that seeks to convey stormwater to the north of the development footprint and toward the natural drainage system which directs water toward Sandy Creek.

The proposed BESS has been relocated to increase the offset from the private properties and to be clear of the 1% AEP flood level. The finished surface level of the pad has been designed to be at or above the level of the PMF. Please refer to *Attachment B – updated Compound Details*.

The proposed pad is above the existing surface levels and has been graded similarly to the slope of the existing land. The pad slopes from east RL 116.50 to west RL 115.75.

Overland flows from the west will be directed around the proposed pad, via a diversion drain, generally following the slope of the existing land.

Once the diversion drain is clear of the pad and batters, a level spreader will be provided to disperse the overland flows along the contour.

7. Noise Impact Assessment

Noise Impact Assessment should be provided in relation to the proposed development to provide a complete assessment of noise associated with the proposal to have regard to its potential to impact on adjoining property and demonstrate compliance with the Noise Policy for Industry.

A Noise Impact Assessment has been carried in accordance with the NSW Noise Policy and Industry. Please refer to *Attachment I.*

Two main modeling scenarios were considered in order to achieve the applicable noise criteria at the sensitive residential receptors;

planning > design > development



Page 7 of 12



- 1. Currently selected plant/equipment only acoustic treatment is a 3m high acoustic barrier wall (hush panel).
- 2. Currently selected plant/equipment acoustic barrier plus additional acoustic treatments on BESS battery containers and PCS investors.

Scenario 2 was formed to be the option required to achieve the required noise level criteria, which include quitter equipment selections such as fans, acoustic attenuators, enclosures, and barriers.

It is considered that the driving fundamentals of the detailed design for the Construction Certificate of the noise suppression option would be proven. The plant would not be able to operate unless it was certified for adhering to the noise criteria.

The Noise Planning Level at the boundary will be validated by further noise testing prior to the BESS being operational.

8. Preliminary Hazard Analysis

A Preliminary Hazard Analysis is required to consider the proposed facility against the provisions of Chapter 3 of the State Environmental Planning Policy (Resilience and Hazards) 2021 and guidelines prepared by the Department of Planning and Environment. This assessment should have regard to any additional hazard considerations related to the sites flood affection.

Riskcon Engineering Pty Ltd has undertaken the *Chapter 3* assessment under *SEPP (Resilience and Hazard) 2021* for the proposed development (BESS). The analysis indicates that the proposed BESS has a discharge capacity of 5MW which is under/less the threshold of 30MW. As the threshold quantities of the DGs stored and transported are not exceeded, *Chapter 3* of *SEPP(Resilience and Hazard) 2021* is not applicable. The report also conducted a review of the potential of the proposed BESS to cause offense which indicated the site operations would be unlikely to occur at levels, that would cause offense. Refer to **Attachment J.**

Furthermore, a Fire Incident Management Plan (*Attachment K*) has been prepared which addresses the Fire Protection measures within the batteries and assesses the fire risk associated with the BESS. It concludes that the proposed designs in conjunction with existing fire protection adequately manage the risk.

A separate Flood Risk Assessment by BMT has also been attached as *Appendix L* to this letter. The report concludes that the BESS pad will be flood-free during the 1%AEP as well as the PMF event. It also suggests that during a 1% AEP, monthly maintenance visits should be rescheduled once the flooding has receded. This is acceptable as the BESS will be operated remotely.

It has also been proposed in the report to move the driveway 50m to the south to reduce the hazard risk. Currently, the existing driveway is utilised to

Page 8 of 12

planning > design > developme





provide access to the proposed BESS. There is a scope for moving the driveway to the south, as suggested in the flood report. This can be adopted if required by the council.

9. Lighting Information and Details

Council is interested in understanding if the proposed compound would be permanently lit. Where the proposed facility is to be lit details of the scope and intensity of any lighting should be required along with any relevant information to assist Council in reviewing its relationship with adjoining land uses and impact on neighbouring properties.

Sites will be remotely controlled with monitored 24/7 CCTV surveillance.

The BESS will be lit permanently during the night by low-level low illuminating lights.

It is also proposed to install soft white lights for security and maintenance reasons which can be switched on when required.

The colour temperature of the lights is 4000k. The lights will be installed at or below the top height of the battery equipments, facing downward. Night lighting will be dim, and low-key to minimise visual impact, light pollution, and fauna impact.

Standby auxiliary power systems will ensure lighting remains viable in blackout situations.

10. Decommissioning Strategy

A more detailed decommissioning strategy is requested. The decommissioning strategy should include:

a) A timeline commitment to the completion of all decommissioning and rehabilitation work within a reasonable period (12 months recommended) from commencement of its decommissioning.

b) An indication of the works involved.

c) A commitment to prioritising the recycling of waste material where-ever possible.

d) An indication of the standard that the site is to be rehabilitated to at the conclusion of the project. ie. plant and hardstand removed and vegetation established suitable for stock grazing.

The Decommissioning Strategy has been updated to address the council's advice. Please refer to Attachment M – updated Decommissioning Strategy.

11. Ausgrid Advice

AUSGRID referral advice is to be reviewed and a response to the matters raised particularly matters requiring resolution at the DA stage is to be provided.

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Page 9 of 12



Noted. Refer to the attached Letter from Ausgrid, Attachment N.

This advice confirms that the Ausgrid has been consulted and has approved the connection and associated infrastructure required for the proposed facility.

Moreover, a separate approval application has been submitted to Ausgrid under *Part 5 EP&A Act 1979* for the proposed (required) connection by Northrop. Refer to the attached connection plans in *Attachment H – Northrop Connection Plans*.

12. <u>Submission</u>

Council has received one (1) submission through the public notification of the development application raising concerns related to the proposed development. A copy of the submission with the personal information of the submitter is attached. As part of this request for additional information you are invited to review the submission and provide a related response or amendments to the proposal.

The following responses are provided to the concerns raised;

1. Could it be possible to relocate the Battery Storage to the northern side of the existing substation which we believe would save costs in roadworks and delivery of the power to the battery? This is also away from the surrounding houses next to the proposed site location. Therefore, this would not impact any adjoining owners?

To minimise any visual or acoustic impacts on the adjoining properties to the south, the development has been moved to the northwest 84m away from the southern boundary. Please refer to *Attachment A – updated Site Layout Plans*.

2. Could consideration be given to ensure run off water be directed away from our property?We do at times have quite significant amounts of water come down through that paddock. We believe that the site location will divert water towards our property and the amount at times will be too great for the diversion bank to hold and run to the northern side of the site to the culvert that enters Sandy Creek.

The BESS has been relocated to increase the offset from the private properties and to be clear of the 1% AEP flood level.

The proposed pad is above the existing surface levels and has been graded similarly to the slope of the existing land. The pad slopes from east RL 116.50 to west RL 115.75. Overland flows from the west will be directed around the proposed pad, via a diversion drain, generally following the slope of the existing land. Once the diversion drain is clear of the pad and batters, a level spreader will be provided to disperse the overland flows along the contour.

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Page **10** of **12**



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3. Should the first proposal fall silent, could the applicant extend the current style of vision proof fencing down our northern boundary through to Palace Street as this is going to impact us visually from both properties. The landscaping plans that are proposed is not going to be an instant visual fix, the trees planned for the landscaping will take several years to grow to the height to screen the batteries and that's if the livestock on the property don't eat them first.

Noted.

The proposed updated 3m hush panel wall fencing around the BESS, will address the above-raised issue. The proposed BESS plant equipment does not exceed 2.52m in height and will be hidden completely behind the 3m proposed wall fencing. Refer to *Attachment B – updated Compound Details* and *Attachment D – Hush Panel Specifications*.

We hope the above including the updated and additional information satisfies the council's concerns. If you wish to discuss this further, please do not hesitate to contact me.

Yours sincerely

HDB Town Planning & Design

Aprajita Gupta

Senior Town Planner



Page **11** of **12**

planning > design > developmen





Page **12** of **12**

