



Meridian Energy Australia Pty Ltd
Level 15, 357 Collins Street
Melbourne VIC 3000

12 November 2020

Nicole Brewer
Director
Energy Assessments
Department of Planning, Industry & Environment

Subject: Response to the Department's Request for Additional Information

Dear Ms Brewer,

I refer to the Department of Planning, Industry and Environment's Request for Additional Information in relation to the Hume Battery Energy Storage System (BESS) (SSD-10460) dated 6 November 2020. The matters raised in the Department's information request are addressed in this letter.

Amended project

In relation to the changes to the number and location of battery units in the amended layout:

- *confirm the capacity of the project;*
- *confirm the number of inverters and the maximum height of inverters;*
- *provide further justification for the change in the number of battery units; and*
- *clarify the nearest receiver and its proximity to the amended project.*

The maximum capacity of the project would be 20 Megawatt (MW) /40 Megawatt-hour (MWh), as described in the Environmental Impact Statement. The number of battery units has been increased to deliver this stated capacity following design refinements of the technology under consideration.

There has been no change to the number or height of inverters since the exhibition of the Environmental Impact Statement. The project would include eight power inverters, each with a maximum height of 2.5 metres. There would also be a maximum of Four 6MVA 630V to 11kV step-up transformers and two auxiliary transformers located within the BESS compound. The larger step-up transformers have a maximum height of 3.2 metres.

The nominated technology provider revised their offer to Meridian during the detailed design process which was ongoing at the time of lodgement of the EIS. The design provided in the RfS recognises refinements to the technology to be deployed and is necessary to achieve the stated two hours of storage at a 20 MW discharge capacity.

The nearest sensitive receiver to the amended project is located at 34 Trout Farm Road. This dwelling is located 230 metres north of the BESS compound fence line and 245 metres from the closest proposed battery, and was referred to in the Noise and Vibration Impact Assessment as RR01.

Amenity impacts

- *Provide further justification of the noise levels for the amended project layout resulting (noting the lower noise levels than predicted in the EIS and a proposed increase in the number of units)*

There was no change in noise levels between the EIS and Response to Submissions report. Worst case construction noise impacts were predicted to exceed daytime criteria by up to 12 dB(A) at PR01, the nearest residential receiver location. The only additional noise information presented in the Response to Submissions report was:

- To calculate the exceedance of daytime noise criteria at a receptor location which was reclassified from industrial to residential based on information provided in a submission. The exceedance at this location (IN02 as documented in Appendix H of the EIS) was predicted to exceed daytime construction noise criteria by up to 10.8 dB(A).
- Describe operational noise impacts at the property boundary as approximately 35dBA at the property boundary as presented in Section 6.4 of the EIS.

The noise assessment as provided in the Environmental Impact Statement is based on confirmation from the technology provider that fence-line noise would not exceed a specified level. This remains the commitment of the technology provider and any necessary noise attenuation would be applied to achieve this outcome. Further, a noise reduction has been achieved through the A5 to Gen6 design change despite more Battery Cubes being used than Battery Containers due to the external HVAC system units of the A5 design being replaced by in-Cube cooling systems.

It is further noted that operational noise is related to inverters and transformers as opposed to the batteries themselves and the numbers of inverters and transformer remains as described in the Environmental Impact Statement.

- *Clarify the night-time operational noise (including operation of inverters and HVAC) with respect to the relevant criteria at the nearest residence.*

Under DC-DC Interconnector mode the inverters would operate continuously since it can run in this mode 24/7. HVAC would similarly operate at any time dependent on temperature. When not in DC-DC Interconnector mode, the inverters would run for approximately 4 and half hours during charging and 2 and half hours during discharging depending on ambient heat (worse case stated) and the state of charge of the batteries i.e full or half charge required for example. This would occur at any time subject to the requirements of the National Energy Market.

Operation noise criteria for the Project were established in accordance with “Noise Policy for Industry” (NPI) (NSW Environment Protection Authority, 2017). In the absence of monitored background noise levels the NPI provides the following minimum rating background levels (RBLs) to be used for the purpose of noise assessment:

Day (7am to 6pm)	Evening (6pm to 10pm)	Night (10pm to 7am)
35	30	30

Operational noise criteria for the Project are determined in accordance with the NSW EPA’s NPI which seeks to regulate noise impact from ‘industrial activity’ pertaining to noise from fixed industry and mechanical plant rather than from road, rail or construction sources. To achieve this, the NPI applies two separate noise levels: one aimed at limiting the intrusiveness of the Project’s noise against the prevailing level of background noise, and the other focused on achieving suitable acoustic amenity for the surrounding land uses from industry. The more stringent of these is used to define the operational noise criteria for a Project.

Intrusive noise levels are set as RBL plus 5 decibels by the NPI which for the Project was calculated as 35 dB(A) for the evening and night time period (Refer to table 4-4 of Appendix H of the EIS).

The NPI also recommends amenity noise criteria for residential receivers of 40 dB(A) during the night time period. To ensure cumulative noise levels do not exceed this level, a Project amenity noise level

was also calculated as 38 dB(A) (refer to Table 4-5 of Appendix H of the EIS). As 35 dB(A) is the most stringent, this level was adopted for the operational noise criteria for the Project during the evening and night time period.

The noise assessment concluded that the highest predicted noise contribution at the nearest residential receiver (PR01) was less than 20 dB(A). This is well below the lowest allowable operational criterion of 35 dB(A). Levels up to approximately 22 dB(A) were predicted at the industrial receivers to the south; well below the operational criterion of 68 dB(A). A sleep disturbance screening criterion of LAeq,15min 45 dB(A) was applied. Considering these findings, it was determined that noise from operations at the facility would be at an acceptable level at surrounding receivers that would not result in sleep disturbance impacts.

The minor revisions to the Project footprint, and number of batteries do not affect the Projects ability to achieve these performance outcomes in relation to noise impacts.

- *Clarify proposed visual mitigation measures*

Visual mitigation measures were provided in the Response to Submissions and EIS as follows:

- Retention and enhancement of existing landscape features (areas of scrub, individual trees) should be considered where feasible
- Limit the area of disturbance during construction
- Cutting and embankment slopes should be seeded to grass to match existing
- Mitigation tree and shrub planting should be considered to compensate for lost habitat and to visually integrate the Project within the surrounding landscape
- Colour of proposed structures and built form should be considered in a suitable muted palette to visually integrate the Project within the landscape
- Consider minimal use of reflective surfaces to avoid drawing attention to the site within views due to reflective glare.

Meridian has committed to the establishment of additional vegetation screening in consultation with Water NSW as the land owner and neighbours. The specific details of such visual screening are yet to be discussed or agreed. Meridian remains committed to undertaking all reasonable and feasible visual screening where permitted by WaterNSW, justified by level of visual impacts and where it does not conflict with bushfire management requirements to be separately agreed.

Clarify the proposed perimeter fencing.

Perimeter fencing, in particular the inclusion of barb wire, was identified as an area of concern, both in the EIS and Response to Submissions. Meridian had previously committed to investigate the ability to avoid use of barbed wire. Subsequently, those investigations have concluded, and Meridian can now commit to avoiding the use of barb wire in its proposed perimeter fencing design.

Meridian will comply with any pre-construction compliance obligations prior to the commencement of the Project. The risk assessments, final design plans and management plans would be used to confirm that barb wire is not a feature of the final design.

Traffic

- *Confirm the total number of light and heavy vehicle movements associated with construction of the amended project.*
- *Confirm the total number of over-size or over-mass vehicles that would be required during construction of the project.*

The main drivers of construction traffic generation are the delivery of construction materials, equipment, plant components, as well as the construction workforce travelling to and from the site. As stated in the EIS and Response to Submissions, it is anticipated that the number of vehicle movements associated with the construction of the project would be 48 light vehicle movements and 8 heavy vehicle movements per day. The six deliveries associated with the additional 16 battery modules identified

within the Response to Submissions Report would be accommodated within the maximum daily vehicle movements modelled.

Following the Response to Submissions Report, it has been identified that delivery of the three by three metre control room (listed below) may occur in up to three deliveries. This was previously described in the Response to Submission Report as being one delivery. Given this minor change to total number of deliveries, traffic volumes for the amended project are consistent with those as modelled on a daily basis in the Environmental Impact Statement.

The updated total anticipated number of deliveries is 92 (184 heavy vehicle movements) as follows:

- Five tonnes of steel in one delivery
- 100 m³ of concrete in 20 deliveries
- 5000 metres of cables delivered in five to ten drums
- 32 deliveries of batteries cores in 40 foot containers
- 15 containers of other equipment
- Four 6MVA 630V to 11kV step-up transformers and two auxiliary transformers in five deliveries
- Eight power inverters in four 40-foot containers
- One, Three by three metre control room, in up to three deliveries (updated from one delivery as previously described in the Response to Submissions Report)
- Two other deliveries of miscellaneous equipment.

The Response to submission does not specifically document total light vehicle movements but has modelled traffic impacts of up to 48 light vehicles movements per day as potentially occurring over an eight-month period.

No oversize vehicles would be required during the construction of the project.

Water

- *Confirm the quantity of water which would be required during construction of the project.*
- *Confirm that the project's water requirements can be sourced from an appropriately authorised and reliable supply.*

During construction of the project, up to 60,000 litres of water is expected to be required, predominantly for compaction and dust suppression activities. Water would be sourced from standpipes and carted to site with a tanker under agreement with water supply authority. A 45,000 litre fire water tank would also be filled during construction.

Water required for the Project would only be sourced from an appropriately authorised and reliable supply. Specific details are yet to be determined.

Closing

I trust that the additional information provided in response to the Request for Additional Information will enable the Department to finalise its assessment of the application. Please do not hesitate to contact me should you wish to discuss any aspect of this project further.

Yours sincerely

Alex Park

Alex Park
Asset Development Manager
Meridian Energy Australia