78 Macgregor Terrace, Bardon 4064

PO Box 189 Red Hill 4059

ABN 72166862157

iris

MEMO

To:	Lauren Van Etten, Senior Development Assessment Planner
	Penrith City Council, 601 High Street, Penrith NSW 2750
From:	Suzie Rawlinson, Director
Date:	28th March, 2022
Re:	**Western Sydney Smart Battery (WSSB), Penrith**
	Council Reference: DA20/0360
	Revised Visual Impact Assessment

1. Introduction

This memo contains a revised visual impact assessment of a proposed modification to the approval for Electricity Generating Works (Battery Storage) proposed for 2235 – 2249 Castlereagh Road, Penrith.

This includes a short description of the visible components of the proposed modification, a revised viewpoint assessment, a revised response to the relevant planning and design principles contained in the *Penrith DCP 2015* (Part C1 Site Planning and Design Principles cl. 1.1.2 B) and conclusion.

2. Visible components of the proposed modification

This visual assessment is based on the design shown in the *Western Sydney Smart Battery (WSSB) Development Application Modification Rev 5* drawing set, dated March, 2022.

The modification proposes that the battery clusters, inverter stations (Power conversion units), and Switching control station be raised up on a platform. This platform would be:

- up to two metres above the existing ground level
- about 0.4 metres thick and supported by concrete piers
- surrounded by a handrail with a galvanised steel finish or similar
- accessed by three sets of stairs located to the northern east and north west of the platform and an access ramp on the north eastern corner of the platform for pedestrians and small forklifts.

A storage area would be located on a concrete base at natural ground level. The existing ground level across the site would remain unchanged.

The layout of the facility, including internal access roads, car parking and site security fencing have been adjusted to allow for the proposed platform.

The following table (Table A) summarises the key changes relevant to this revised visual assessment.

TABLE A: SUMMARY OF CHANGES RELEVANT TO THE VISUAL IMPACT ASSESSMENT

The approved project	Proposed modification	Key differences
- 14 x battery containers which would be about 3 metres tall *(up to 4.5 metres if raised by 1.5 metres)*	- 10 x battery cube clusters, each of a larger footprint, and about 2.4 metres tall *(up to 4.4 metres when raised on the proposed platform)*	- About 0.1 metres lower than approved plan - Reduced number of battery clusters
- 12 x Inverter skids which would be about 3 metres tall *(up to 4.5 metres if raised by 1.5 metres)*	- 6 x Inverter stations (Power conversion units), about 2.6 metres tall *(up to 4.6 metres when raised on the proposed platform)*	- Inverter stations about 0.1 metres lower than approved plan - Reduced number of inverter stations
- 2 x filters (containing two filters each) which would be about 6 metres tall *(up to 7.5 metres if raised by 1.5 metres)*	- Not required	- Filters have been removed
- An MV main substation occupying an area of about 12 x 3 metres.	- Switching control station that is 3.9 metres tall *(up to 5.9 metres when raised on the proposed platform)* - 2 x transformer skids that would be 1.2 metres tall *(up to 2.7 metres when raised on the proposed platform)*	- MV main substation has been replaced by three small structures occupying a smaller footprint
	- Storage area that is up to 2.6 metres tall *(located on natural ground)*	- One additional structure

While the platform would raise the battery storage and inverter stations higher than the 1.5 metres allowed for in the approved plans, as the individual components selected for the project are not as tall as described for the approved project, the overall height of these components would be slightly lower.

The number and configuration of the battery storage facilities has also been revised, reducing the number of structures but increasing the footprint of each component. The new arrangement removes all internal access roads and the individual components are more widely spaced apart.

The new battery elements and associated structures would not be painted bright primary or iridescent colours. The modification replaces battery containers with battery cubes clustered together, which would have a higher quality finish than batteries housed in a container.

The area under the platform would have a gravel or aggregate finish and the surrounding areas would be grass.

The plans for the proposed modification also show lighting, and four lightning rods (about 20 metres tall) that are required as a part of the existing approval. All cables would be contained in cable trays under the concrete platform.

2. Visual impacts of the proposed modification

Visual catchment

Due to the reduced overall height of the main components of this proposal, the proposed modification would not notably alter the visual catchment of the project as described in the Visual Assessment undertaken for the approved project (15th September 2020).

Viewpoint assessment

following table (Table B) is a revised assessment of the representative viewpoints contained in the Visual Assessment prepared for the approved project (15th September 2020).

This assessment found that the visual impacts would be unchanged from the original approval.

Summary of viewpoint assessment findings

While the modification proposes the introduction of a concrete platform structure, raising the BESS facilities above the ground by up to two metres, the overall height of the Battery Storage facility would not increase, maintaining the overall low scale of the project components. The arrangement of the batteries, inverter stations, switching control station and transformer skids on this platform would continue to include the lower height structures nearest to the main viewing locations. This would provide some screening of the taller elements and also the lower parts of the existing substation to the north.

While the individual battery clusters would be larger in size than the approved project, slightly increasing the visual mass of these components, they would still be relatively small in scale compared to the adjacent large scale industrial buildings and existing substation buildings. There would be less individual battery clusters and inverter stations, spaced further apart, allowing for more openness and more open views through these structures above the platform.

The new arrangement eliminates the access tracks, reducing the overall footprint of the battery storage facility. The stairs and ramping structure have also been located to the rear of the site in a less visually prominent location from the main views to the site.

The character of the Battery Storage facility would continue to be consistent with the existing substation and other energy related and industrial scale structures within views to the site.

Overall, there would be **low** to **negligible visual impact** on views to the site as a result of the project including the proposed modifications. These visual impact levels are consistent with the approved project.

TABLE B: VIEWPOINT ASSESSMENT

		Approved project		Proposed modification	
Viewpoint	Visual sensitivity	Magnitude of change	Visual impact	Magnitude of change	Visual impact
Viewpoint A – View west from entrance to Museum of Fire (view northwest)	low-moderate	Low	Minor visual impact	Low - The proposed Battery storage facilities would not be any taller than the approved project. - The individual battery cube clusters and inverter stations would be larger in size than the approved project, slightly increasing the mass of the components. They would, however, still be relatively small in scale compared to the adjacent large scale industrial buildings and existing substation structures. - The platform may be visible but would not be prominent in this view due to the distance and filtering by intervening vegetation. - The arrangement of the Battery storage facility would continue to locate the lower height elements, i.e. the battery cube clusters and inverter stations, closer to this view and the closest components would screen those beyond due to the flat platform. - The ramp and stairs would also be located to the northeast and adjacent to the existing substation, with the entry to the ramp closest to the viewer, reducing their prominence in this view. - The character of the Battery storage facility would be consistent with the existing character of the substation and other energy related and industrial elements in this view.	Minor visual impact
Viewpoint B – View north from Museum Drive in the vicinity of the site	low	low - moderate	Minor visual impact	low - moderate - The platform would be visible in the middle ground of this view and there may be some views to the areas under the platform, however, the overall height of the Battery storage facility would not be any taller than the approved project. - The individual battery cube clusters would be larger in size than the approved project, slightly increasing the visual mass of these components. They would, however, still be relatively small in scale compared to the adjacent large scale industrial buildings and existing substation structures. - The individual battery cube clusters and inverter stations would be spaced further apart, allowing for more open and broader views between these structures above the platform. - The new arrangement of the Battery storage facility would continue to locate the lower height elements, i.e. the battery cube clusters and inverter stations, adjacent to the road, and the taller	Minor visual impact

		Approved project		Proposed modification	
Viewpoint	Visual sensitivity	Magnitude of change	Visual impact	Magnitude of change	Visual impact
				switching control station, to the rear of the site adjacent to the existing substation. Therefore, the scale of slightly taller structures would be mitigated by the foreground batteries which would largely screen them from view. - The stairs would be set back from the road and would not be clearly seen from this location. - The access ramp would also be located to the northeast of the platform, adjacent to the existing substation, reducing its prominence in this view. - The proposed battery storage facility structures would continue to provide some screening of the existing view to the buildings and lower structures within the substation. - The character of the Battery storage facilities would be consistent with the existing character of the substation and other energy related and industrial elements within this view.	
Viewpoint C - View north east from the corner of Castlereagh Road and Museum Drive	Low	low	Negligible	Low - The proposed Battery storage facilities would not be any taller than the approved project and therefore not have a larger scale. - The individual battery cube clusters and inverter stations would be larger in size than the approved project, slightly increasing the mass of the individual components, however, the project would still have a relatively small mass and scale compared to the adjacent large scale industrial buildings and existing substation structures. - The platform may be visible but would not be prominent in this view due to the distance. - The character of the Battery storage facilities would be consistent with the existing character of the substation and other energy related and industrial elements within this view. - The arrangement of the Battery storage facilities would continue to locate the lower height elements, i.e. the battery cube clusters and inverter stations, closer to this view and the closest battery cube clusters would screen those beyond due to the flat landform. - The ramp and stairs would be located to the northwest and northeast and out of view.	Negligible

Response to the relevant planning and design principles

The following table (Table C) provides a response to the design principles identified in the *Penrith DCP 2015* (Part C1 Site Planning and Design Principles cl. 1.1.2 B).

TABLE C: RESPONSE TO THE DESIGN PRINCIPLES IDENTIFIED IN THE PENRITH DCP 2015

Principle:	Response	Change due to the proposed modification
Protect and enhance the visual diversity and scenic quality of gateways and view sheds within the City of Penrith, including detailed, mid and long range views.	There are no gateways identified near the proposal site. Although a 'major ridgeline' located 1.7 kilometres east of the site including Parker Street Reserve (a '*major viewpoint location'*) contains '*regional views of Blue Mountains'* (2-4, Envisage Consulting, 2019), view sheds from this ridgeline to the proposal site would be blocked by intervening vegetation and built form.	No change
Protect and enhance the key regional natural features that contribute to the character of Penrith as a City, including the Blue Mountains escarpment, the Nepean River, other riparian corridors and bushland reserves.	The proposal site does not contain any key regional natural features.	No change
Protect, maintain and enhance other important natural features, including ridgelines, hillsides, watercourses and riparian corridors, vegetation and landform.	The proposal site does not contain any important natural features.	No change
Protect, maintain and enhance backdrops and settings that contribute to the local identity.	The Museum of Fire, Penrith Railway Station and main western railway line are local visual features that contribute to the local identity of this part of Penrith. The proposal site does not form part of the setting of the heritage listed Museum of Fire building. The proposal would not be prominent in views from the main western railway line, nor does it form part of the backdrop to the station.	No change
Protect, maintain and enhance views and vistas from vantage points, including main road corridors and other public places.	The proposal would be visible but not prominently feature in views from the Museum, Castlereagh Road and other nearby areas of public realms including footpaths, parkland and playground at the Museum. The site would not be feature in the regional views of Blue Mountains from	The revised viewpoint assessment identified confirmed there would not be any additional visual impact as a result of

Principle:	Response	Change due to the proposed modification
	the ridgeline extending north from Parker Street Reserve, due to intervening vegetation and built form.	the proposed modification. No change
Conserve and enhance historic landscapes, properties and their curtilages.	The heritage listed Museum of Fire building is surrounded by an expansive lawn area, which forms a generous and open setting to the building. The proposal site would not directly impact this setting; nor would it impact the mature avenue of trees along Museum Drive, which contributes to the Museum landscape and sense of arrival.	No change
Plan and site new development to enhance local identity. Development is to effectively integrate with the surrounding landscape so that any change as a result of the new development does not compromise the character of the landscape. Issues such as context, scale, size, built form and height, setbacks/buffers, landform, structural space (private and public), streetscape, vegetation and infrastructure are to be addressed.	The proposal is located in an industrial area and forms part an existing substation site. The proposal is in character, scale and form with the objectives of the general industrial land use zone. The site is vacant and cleared and would not require any major earthworks or removal of streetscape trees or vegetation.	No change
Strengthen local identity through consistency and/or compatibility of design. Design development to take into account issues such as scale, form, line, colour, texture, lighting, existing vegetation, open space and landscaping.	The proposal is in character, scale and form with the objectives of the general industrial land use zone.	No change
Use vegetation to frame scenic views, provide interest or change, define new space, provide backdrops and visually connect all other elements within the setting.	There are no scenic views in the vicinity of the site. The existing vegetation along Museum Drive provides visual interest and defines the setting of the Museum. There is no further vegetation required.	No change
At gateways, reinforce the distinct experience of arrival or passing from one landscape character type to the next, through legible site planning and design.	There are no gateways identified near the proposal site.	No change

Conclusion

The site has a limited visual catchment, being mainly contained by surrounding industrial development and existing trees. There would be **minor adverse** visual impacts on views from The Museum of Fire and Museum Drive and **negligible** visual impacts from Castlereagh Road and all other areas. This is consistent with the visual impacts identified for the approved project.

Mitigation measures

The revised layout of the facility, and reduced overall height, responds to the visibility of the site in locating the smaller structures (battery cube clusters and inverter stations) along Museum Drive and setting the more visually prominent structures (the Switching control station) towards the north of the site and adjacent to the existing larger scale infrastructure associated with the existing substation.

Due to the small visual catchment of the site, low potential visual impact and the compatibility of the proposed battery storage facility with the surrounding industrial setting, there are no further mitigation measures necessary to address the scenic values of the locality.