Darlington Point

State Significant Development (SSD 8392)

Modification Report – Battery Energy Storage System

June 2021

Table of Contents

1 Introduction

1.1 The Approved Project

Edify Energy Pty Ltd (**Edify**) has approval for the development, construction and operation of the Darlington Point Solar Farm, being a 275 megawatt (**MW**) photovoltaic solar farm (**DPSF**) and the adjacent 100 MW-hour (**MWh**) battery energy storage system (**DP BESS**) (together, the **Development**), approximately 10 kilometres south of Darlington Point on Donald Ross Drive, in the Murrumbidgee local government area of New South Wales (the **Site**). The project was approved, subject to conditions, by the Minister for Planning on 7 December 2018 (SSD 8392) (the **Development Consent**).

The DPSF has completed construction, achieved registration as a generator in the National Electricity Market (**NEM**) and is currently exporting electricity to the grid during its commissioning phase. As envisaged in the original development application (**Development Application**), the DP BESS was approved for construction subsequent to the completion of the solar farm, with construction yet to commence on this portion of the project.

The need for battery energy storage system (**BESS**) installations in the NEM has increased significantly since the Development Consent was approved as the need to replace the forecast retirement of existing base-load conventional generation (typically fuelled by coal) increases. The DP BESS will not only provide firming support to enable increased penetration of renewable energy but will also provide network system strength support in the region surrounding the Development.

Edify is seeking to modify the Development Consent to increase the approved capacity of the DP BESS to be installed on the Site.

1.2 Purpose

This report (**Modification Application**) has been prepared to support an application to modify the Development Consent, consistent with Edify's comments and suggestions as documented during the Development Application assessment process. The Modification Application includes:

- Detailed description of the modification being sought – Section 2
- Detailed justification for the modification being sought – Section 3
- Legislative context for the Modification Application – Section 4
- Details of the consultation undertaken in relation to the proposed modification – Section 5
- Assessment of relevant additional impacts – Section 6
- An outline of the amendments sought to the development consent – Section 7

This Modification Application has been prepared by Edify.

1.3 The Proponent – Edify Energy Pty Ltd

Edify is a market leading, Australian-owned renewable energy company with significant experience in developing and project financing renewable projects across Australia. Edify has financed six (including DPSF) large-scale solar farms and a 25MW / 50MWh BESS. Edify has broad energy expertise, covering project development, project design and engineering, financing, construction management, energy markets and asset management.

Edify supports the full life-cycle of renewable energy projects during development, construction, and operation, including greenfield development, project structuring and financing, construction management and a full asset management offering, including trading and operations.

Edify's philosophy is to ensure that its interests are closely aligned with its investment and community partners. For this reason, in addition to providing long-term asset management services, Edify seeks to maintain a long-term equity interest in its projects, ensuring that Edify's long-term project view is aligned with that of its investors and community stakeholders resulting in best-in-class assets. This also makes an important difference in our community engagement approach due to the fact that we are establishing relationships with communities during the development phase that will endure for the lifetime of the projects.

1.4 Project Location

The Project Site is as shown in Figure 1. The DP BESS is located within Lot 1 DP 1249830 which was subdivided for this purpose following Development Consent approval and is consistent with the final solar farm site layout approved by Murrumbidgee Council. The certified construction drawings (refer to Appendix A) were issued to the Department of Planning, Industry and Environment (**DPIE**) on 21 June 2019 to satisfy compliance with Schedule 2, Condition 6 of the Development Consent, confirming the Project Site.

The Development Consent was approved on the basis of an indicative DP BESS site boundary (shown in SSD-8392 - Appendix 1), which was based on the draft subdivision plan available at the time of approval. Subsequently, the Project Site boundaries were updated per the submission to the DPIE as noted above. It is noted that the parcel size of Lot 1 DP 1249830 is consistent with the land area proposed for the DP BESS (~2ha) in the original Development Application despite the increase in BESS capacity which is the purpose of this Modification described in Section 2. This has been enabled through more efficient land usage, optimised layout design and ongoing improvement in the storage density of battery technologies.

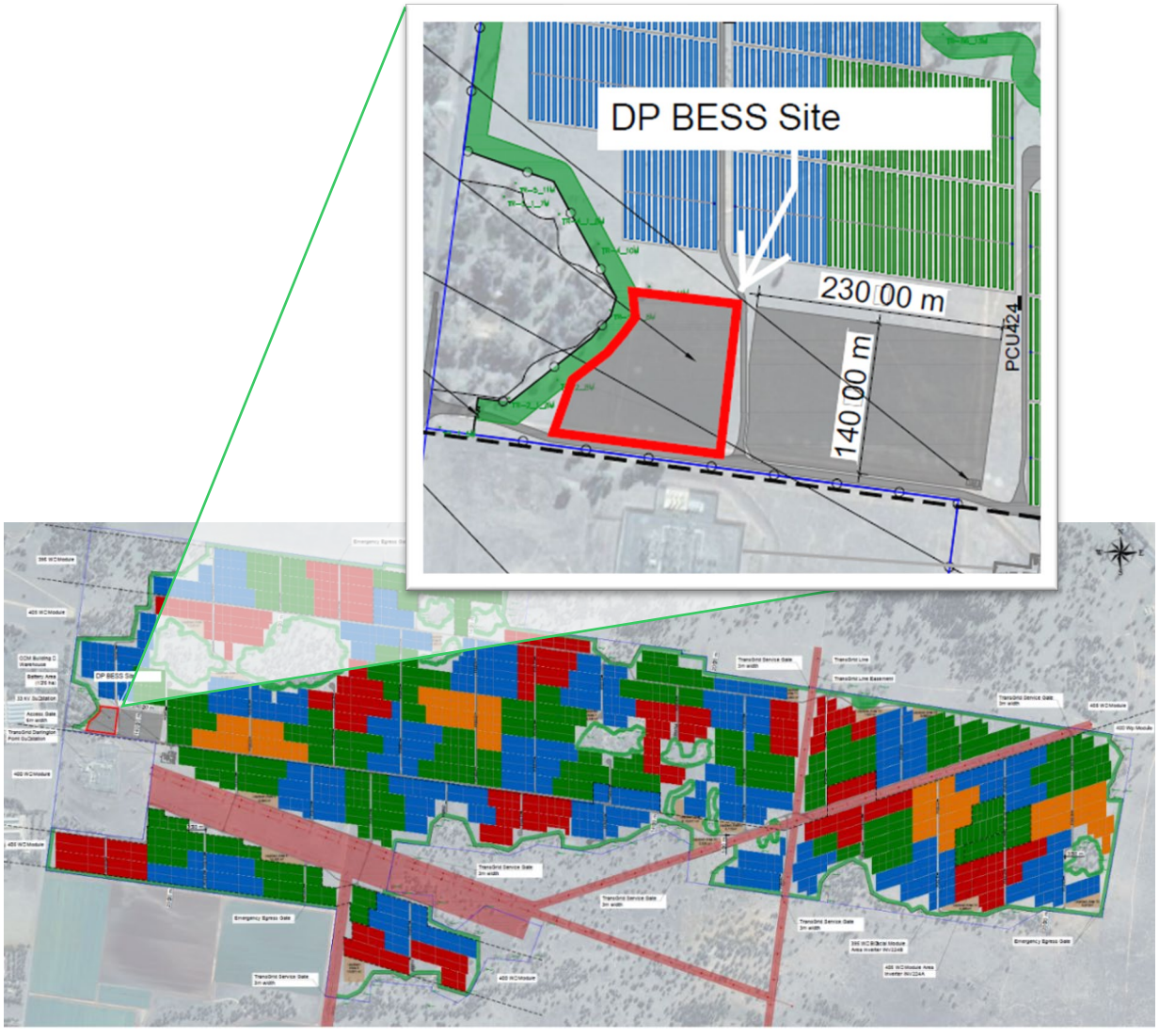

Figure 1 Site layout showing location of the DP BESS

2 Proposed Project Changes

The Development Consent includes approval for the construction, installation, and operation of the DP BESS, which was proposed as a 100 MWh BESS within the approved development footprint on Lot 1 DP 1249830 (Figure 1).

As indicated in responses to public submissions via an Additional Information Report dated 12 November 2018 (AI Report), it was envisaged during the planning stages that there could be changes to the proposed DP BESS in terms of technology and capacity between the time the Development Consent was approved and when construction on the DP BESS may begin. Edify confirmed at the time that a modification would be sought when these details could be confirmed. Further, the Development Consent requires a revision to the preliminary hazard assessment prior to commencement of construction of the DP BESS to capture any additional changes in the proposed facility.

As such, and consistent with the approach identified during the Development's application process, Edify is proposing to modify the Development Consent to increase the DP BESS capacity from 50 MW/ 100 MWh to 200 MW/ 400 MWh, which will include individual battery power pack cubicles or skid-mounted/containerised power packs, inverters, transformers, switchgear, buried cables and associated equipment to connect to the existing TransGrid Darlington Point Substation (the **Modification**).

The following section provides further details on the requested Modification.

2.1 Increased DP BESS Capacity

At the time of submission of the Development Application, the South Australia Hornsdale Power Reserve (the "SA's big battery") at 130 MWh was the only large-scale grid connected BESS in Australia and was the largest lithium-ion battery in the world. Given the market projections at the time, Edify's Development Application considered a 100 MWh BESS to be an appropriate projected design capacity based on the technology roadmap available and assessment of energy market modelling of future storage requirements in the NEM.

In the few years since the Development Consent was approved, the NEM and global energy industry has witnessed a significant increase in the adoption of large grid-connected BESS's, which is being driven by a number of factors, including:

- a fundamental energy market shift towards increased renewable energy penetration beyond what was predicted only a couple of years ago (which has been supported by legislation such as that accompanying the NSW Electricity Strategy and NSW Electricity Infrastructure Roadmap);
- improvement in battery technologies improving power density and resulting in longer term storage batteries becoming more efficient and feasible; and
- reductions in battery module costs, which has resulted in the costs to install a BESS falling significantly faster compared to previously predicted battery cost reduction curves.

The significant and rapid changes that are underway in the electricity market in NSW and Australia have increased the need for and improved the fundamental economics of large-scale batteries connected to the NEM. Edify has updated its market view and re-assessed the physical and technical potential for the BESS to be installed on the Site. This assessment has shown that the market need for utility-scale BESS in NSW and the NEM will significantly increase over the next few years and decades, and therefore Edify is proposing to optimise the capacity of the approved DP BESS based on land and connection capacity constraints known today.

Based on an assessment of a range of project considerations, including land usage, planning impacts, environmental factors, network capacity and system strength, BESS cost projections and energy market economics, Edify has determined that the optimum maximum capacity for the DP BESS on the Site is 200 MW/ 400 MWh indicatively shown in Figure 2.

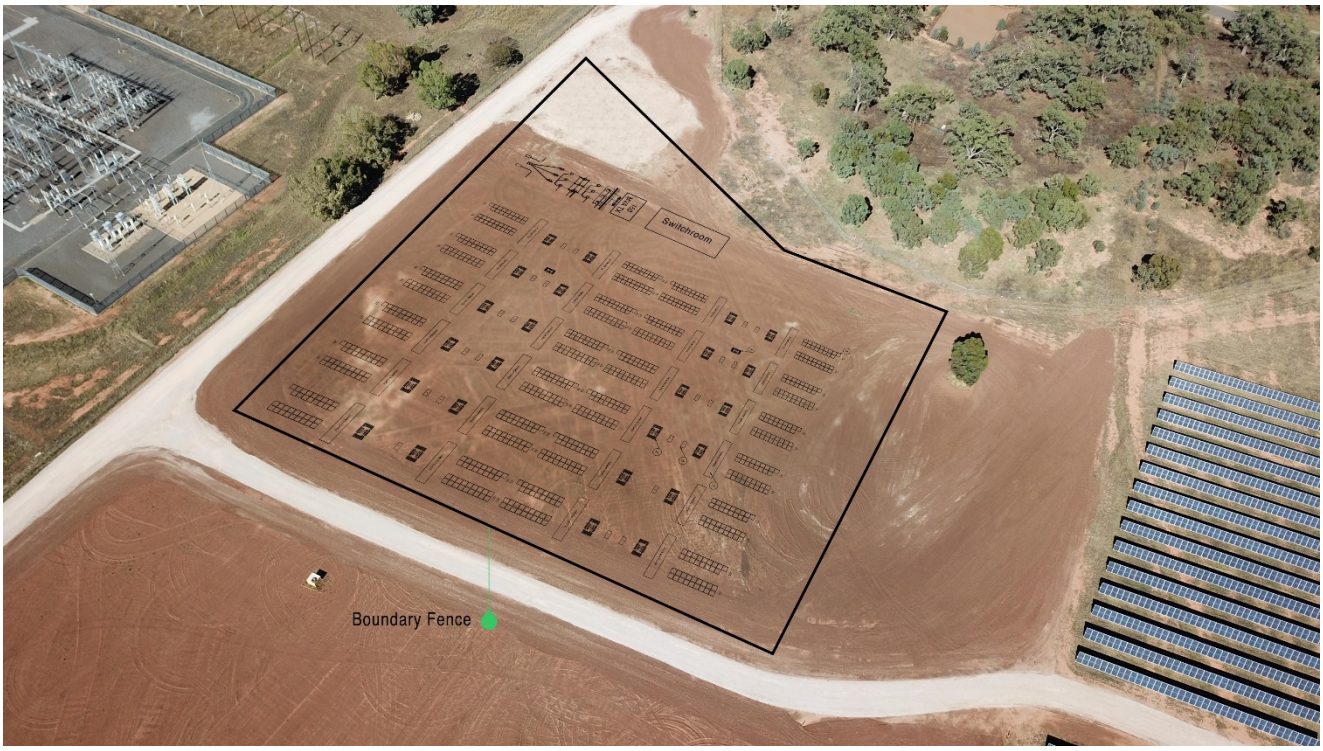

Figure 2 Indicative Layout of the proposed increased capacity of the DP BESS

3 Justification for the Modification

As previously indicated, the Development Consent has approved the installation of a 50 MW/ 100 MWh BESS within the development footprint. The intent of this Modification Application is to seek approval to increase the capacity of the approved DP BESS to be installed and operated. The following sections provide further details and the justification for the Modification.

3.1 Contributions to Federal and State Climate Change Policies

Electricity generation is the largest individual contributor of greenhouse gas emissions in Australia, accounting for 32.7 per cent of emissions in the year to March 2020 (Department of Industry 2020). This Modification improves on the original contributions of the Development Consent in the decarbonisation of this emissions intensive sector, through the connection of dispatchable capacity in NSW which enables increased renewable energy generation to be connected to the grid. This is a key focus area of the NSW Government through its NSW Electricity Infrastructure Roadmap (as discussed below) and provides vital support to the NEM through the ongoing and inevitable retirement of traditional, thermal electricity generators that are approaching their intended design-life.

A number of state, federal and international policies and frameworks have been agreed to assist in this transition to a lower emission NEM:

1. The Clean Energy Regulator introduced the Renewable Energy Target (**RET**) in 2001, which is a federal government scheme designed to reduce emissions of greenhouse gases in the electricity sector and encourage additional generation of electricity from sustainable and renewable sources. Based on current and projected renewable energy installations, the national target of achieving 33,000 gigawatt hours of renewable electricity generation (approximately 26-28%) renewable energy by 2030 (*Clean Energy Regulator, 2018*) looks set to be achieved and exceeded.
2. The 2015 Paris Climate Conference (COP21) achieved a legally binding and universal agreement on climate, with the aim of keeping global warming below 2°C, chiefly by reducing greenhouse gas emissions (*Australian Government, Department of Industry, Science, Energy and Resources, 2020*).
3. The DPIE Net Zero Plan Stage 1: 2020–2030 (**Net Zero Plan**) is a commitment by the NSW Government to taking decisive and responsible action on climate change. The Net Zero Plan has the goal of reducing the State's emissions by 35% by 2030, compared to 2005 levels, whilst supporting regional investments that total $7 billion and create approximately 1700 regional employment opportunities (*NSW Government 2020*).
4. The NSW Government has also set a broader goal of net zero emissions by 2050 and has released policies to fast-track emissions reduction over the next decade and prepare the State to take further action in the decades to follow.

As a practical measure to support the above policies and frameworks, the NSW Electricity Strategy was released by the NSW Government in November 2019 to support increased renewable energy generation partially through the use of Renewable Energy Zones (**REZs**). The NSW Electricity Strategy was followed by the NSW Electricity Infrastructure Roadmap released in November 2020 which outlines a plan to build out infrastructure to enable the implementation of REZs. As part of the NSW Electricity Infrastructure Roadmap, the NSW Government has also indicated it would support dispatchable resources (including BESS installations) through firming off-take contracts with individual projects, in which the DP BESS proposed in this Modification could participate.

The federal and NSW state governments' commitment to the introduction of renewable energy to the NEM generation mix has to date resulted in a significant amount of variable renewable generation being connected to the grid, with the rate of connection of new renewable generation expected to increase. These projections are confirmed by the Australian Energy Market Operator (**AEMO**) which has released its 2020 Integrated System Plan to support the transition of the grid from traditional centralised generation sources to renewable sources, and specifically identifies 6-19 GW of new dispatchable resources (including BESS) to be installed by 2040 to provide back-up to variable renewable generation to achieve these targets.

This proposed Modification supports the above emissions reduction policies through increasing dispatchable capacity and electricity resources (i.e. BESS) in NSW as required under the ISP and NSW Electricity Infrastructure Roadmap, which will facilitate and enable the planned transition to higher renewable energy penetration in the NEM. Further, the proposed DP BESS is located within the proposed South-West REZ identified in the NSW Electricity Strategy, and therefore will support the goals and objectives of the NSW Electricity Strategy and NSW Electricity Infrastructure Roadmap in developing at least 12 GW of additional renewable energy generation in NSW by 2030.

3.2 Electricity Market Benefits

AEMO (*AEMO 2020*) forecasts that grid-supplied electricity consumption will remain flat for the next 20 years, despite projected 30% growth in population.

Although not required to meet projected electricity demand, the proposal would benefit the network by balancing the network in an increasingly variable generation focused grid, with the ability to shift energy from high generation / low load periods to higher load / lower generation periods, as well as providing market

ancillary services (e.g. frequency control ancillary services, or “FCAS”) to support grid stability as grid and market dynamics change.

According to Deloitte, Australian households will pay $510 million more for power in 2020 without renewable growth through the RET and up to $1.4 billion more per year beyond 2020.

Renewables increase competition in the wholesale energy market – and, as in any market, more competition means lower prices. This is particularly true in the case of the dispatchable capability provided by the DP BESS, which will increase competition and capacity to satisfy peak demands and place downward pressure on electricity prices.

3.3 Socio-economic Benefits

3.3.1 Employment

In 2018/19, 26,850 Australians were directly employed in the renewable energy sector with 5,770 jobs created since the 2017/18 financial year (ABS 2020).

This proposal would generate 30-35 new full time equivalent (**FTE**) jobs during the construction phase in regional NSW, in addition to indirect employment opportunities supported from the ancillary supply chain and construction/operational activities in the region.

The proposal will create a range of direct and indirect employment opportunities (approximately 1-2 FTE jobs) during the operation and maintenance phase (expected to be around 15-20 years). Additionally, employment benefits through contracting opportunities with the project during operations include fence supplies and maintenance, road grading, vegetation management and the grazing and shearing of sheep.

The employment benefits for construction extend through the local supply chains to fuel supply, vehicle servicing, uniform suppliers, hotels/motels, cafés, pubs, catering and cleaning companies, tradespersons, tool and equipment suppliers and many other businesses.

4 Consultation

Edify is a long-term owner and operator of projects. This makes an important difference in our community engagement approach due to the fact that we are establishing relationships with communities during the development phase that will endure for the lifetime of the projects.

Consultation has been undertaken with the following stakeholders, who have the potential to be affected by the proposed modification.

4.1 Department of Planning, Industry and Environmental (DPIE)

Since 23 November 2020, Edify has engaged and consulted with DPIE to discuss and confirm the nature of the proposed modification and confirm the modification application and report requirements. Some notable details of the consultation to date include:

Date	Consultation	Feedback
5 February 2021	Edify lodged a Scoping Meeting Request with DPIE via the Major Projects portal, including proposed modification details. Followed by auto email from DPIE to Edify Energy acknowledging application received.	N/A

12 February 2021	Modification Scoping Meeting via Teams meeting with DPIE (Iwan Davies, Team Leader Energy Assessments, Planning & Assessments & Rob Beckett, Environmental Assessment Officer, Energy, Industry and Compliance) and Edify Energy (Claire Driessen).	Confirmed:
		• administrative items relating to Modification Application – 4.55(1A) modification, $5,000 application fee, no public exhibition required
		• Consultation with nearest sensitive receivers will be required (specifically R2, R3, R4, and R5)
		• Modification Report to consider:
		  ○ Noise (updated Noise Impact Assessment required)
		  ○ Visual amenity
		  ○ Biodiversity
		  ○ Heritage
		  ○ Traffic and Transport
		  ○ Hazards including Bushfire (updated PHA required)

16 February 2021	Email from DPIE to Edify Energy to provide Preparation of Modification Report document to guide Edify in preparing the Modification report.	Confirmed details discussed in Scoping Meeting

4.2 Near Neighbours

The proposed modification to the Development is not expected to affect near neighbours in relation to visual amenity, noise or vibration levels. Visual amenity is discussed in Section 6.2.4, and noise is discussed in detail in Section 6.2.5.

There was ongoing consultation with the near neighbours during the construction phase of the DPSF (including via letterbox drops, telephone conversations and house visits). The proposed modification to the Development is specific to the approved DP BESS capacity, therefore recent consultation with the near

neighbours has been targeted at discussing this aspect only. DPIE advised Edify to consult with the nearest sensitive receivers to the DP BESS site, specifically R2, R3, R4, and R5 as shown in Figure 3 below.

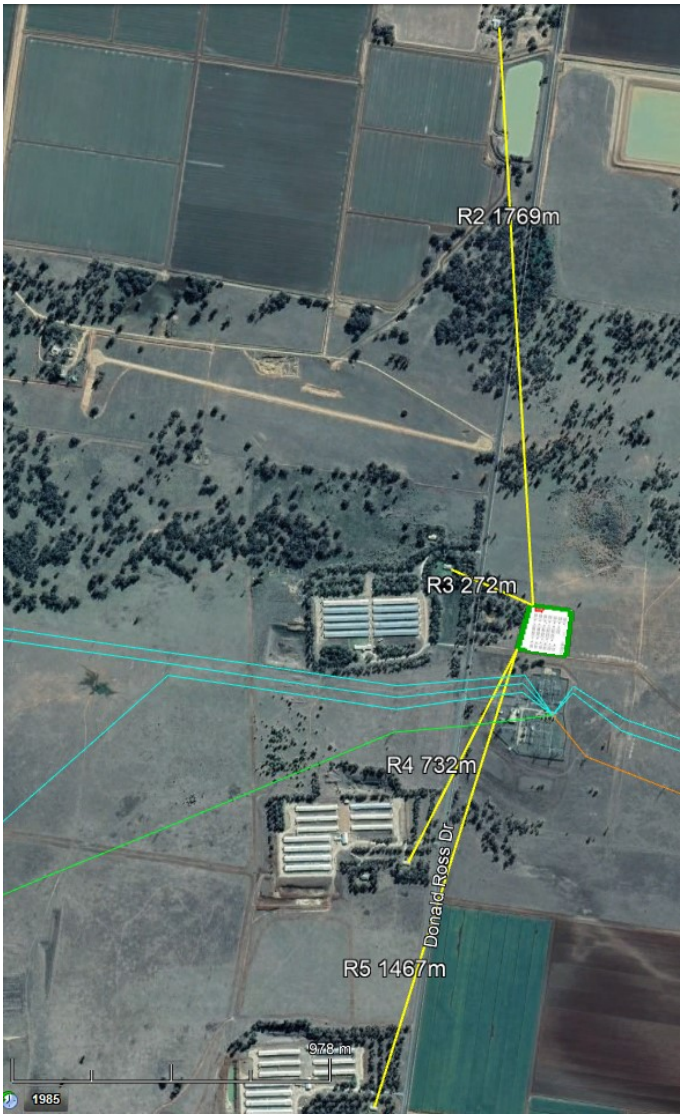

Figure 3 Nearest sensitive receivers to the DP BESS site – R2, R3, R4, and R5

Consultation with the nearest sensitive receivers was undertaken recently, via telephone and/or email correspondence, as follows:

Date	Consultation	Feedback
6 May 2021	Phone call from Edify (Kris Fulton) to owner of R3, R4, and R5 (and R6).	Call not answered – left voice message regarding the purpose of the phone call and requested return call.
6 May 2021	Phone call from Edify (Kris Fulton) to owner of R2.	After introductions, advised R2 owner that we are seeking to expand the DP BESS capacity and confirmed a larger BESS would fit into the same land parcel. Explained that a noise impact study had

Date	Consultation	Feedback
		been undertaken and there would be no additional noise increase at his property. R2 Owner responded that he was not impacted by any of the activities during the DPSF development and had no objections to the proposed additional capacity to the DP BESS.
7 May 2021	Phone calls, followed by email correspondence from Edify (Kris Fulton) to owner of R3, R4, and R5 (and R6).	Calls not answered – left voice messages requesting return call and advised an email outlining the purpose of the contact would be sent. Detail provided in email correspondence: advised R3, R4, and R5 owner that we are seeking to expand the DP BESS capacity and confirmed a larger BESS would fit into the same designated land parcel. Explained that a noise impact study had been undertaken and there would be no additional noise increase at the residences, R3, R4, and R5. Owner of R3, R4, and R5 (and R6) responded via email advising, "*All ok by me if no impact on the staff and birds*".

In summary, no issues or concerns were raised by the owners of R2, R3, R4, and R5 (and R6) during the consultation process or to date in relation to the proposed modification to the DP BESS capacity or any associated noise or visual potential impacts. Consultation with these near neighbours will continue during assessment of the Modification (if required), during construction of the DP BESS and throughout the operation of the facility.

5 Permissibility

5.1 Approval Status

Approval for the Development (SSD 8392) was granted on 7 December 2018 under Part 4, Division 4.1 of the *NSW Environmental Planning and Assessment Act 1979* (**EP&A Act**). The Development Consent permits the construction, operation and decommissioning of the DPSF, being a 275 MW photovoltaic solar farm and associated infrastructure, as well as the DP BESS, an adjacent 100 MWh BESS.

Mod 1 (SSD 8392 MOD-1) is the first modification for Darlington Point Solar Farm.

5.2 Consistency with Existing Approval

Changes which are consistent with the Conditions of Consent do not require a Modification and can be constructed under the existing approval. A review has been undertaken to determine:

- Whether the change proposed would be substantive changes to the project's nature or description.
- Whether the change proposed would impact on the ability to meet any Conditions of Consent.
- Whether the change proposed would have a material change to predicted environmental impacts.
- Whether additional management strategies (or changes to the required management plans) would be required as a consequence of the changes.

The findings of the review are:

- The change proposed will not substantively change the Development, as the project will still involve the construction, operation and decommissioning of a solar farm with a generating capacity of 275 MWac and associated infrastructure. Although the DP BESS capacity is proposed to increase, it is proposed to remain within the existing project footprint.
- There are no Conditions of Consent that cannot be met during the construction, operation and decommissioning of the proposed DP BESS.
- The proposed change in DP BESS capacity will not have a material change to the predicted environmental impacts. Five environmental aspects have been identified for closer assessment in this Modification Report:
    - Biodiversity;
    - Aboriginal Heritage;
    - Traffic and Transport;
    - Visual Amenity;
    - Noise and Vibration; and
    - Hazards and Bushfire Risk.
- Given the proposed separate operation and nature of the DP BESS and the separate staging of construction works, it is considered prudent and necessary to submit a suitable strategy, set of plans or program specifically relevant to the construction, operation and decommissioning of the DP BESS to the Secretary for approval. These would clearly describe the specific stage that applies to the DP BESS. Therefore, in accordance with Schedule 4, Conditions 1, 2 and 3, it is intended DP BESS-specific strategy, management plans and program will be developed and submitted to the Secretary for approval.

5.3 Modification Application

This Modification Application has been lodged under Section 4.55(1A) of the EP&A Act.

Under Section 4.55 of the EP&A Act, a SSD Development Consent can be modified where the "*development to which the consent as modified relates is substantially the same development as the development for which the consent was originally granted*".

In determining an application for a modification under section 4.55 of the EP&A Act, the consent authority must consider such matters referred to in section 4.40 as are relevant to the development. These matters

include the likely impacts of the proposed amendments to the Development Consent, including environmental impacts on both the natural and built environments, and social and economic impacts in the locality.

Modifications are allowed that are 'substantially the same development'. Section 1(A) and Section 2 of Clause 4.55 differ regarding whether the proposed modification is of minimal environmental impact or not.

> ***Environmental Planning and Assessment Act 1979 extract***
> *4.55 Modification of consents—generally*
> *(1A) Modifications involving minimal environmental impact*
> *A consent authority may, on application being made by the applicant or any other person entitled to act on a consent granted by the consent authority and subject to and in accordance with the regulations, modify the consent if:*
> - *a) it is satisfied that the proposed modification is of minimal environmental impact, and*
> - *b) it is satisfied that the development to which the consent as modified relates is substantially the same development as the development for which the consent was originally granted and before that consent as originally granted was modified (if at all), and*
> - *c) it has notified the application in accordance with:*
>   - *i. the regulations, if the regulations so require, or*
>   - *ii. a development control plan, if the consent authority is a council that has made a development control plan that requires the notification or advertising of applications for modification of a Development Consent, and*
> - *d) it has considered any submissions made concerning the proposed modification within any period prescribed by the regulations or provided by the development control plan, as the case may be.*
>
> *Subsections (1), (2) and (5) do not apply to such a modification.*
>
> *(2) Other modifications*
> *A consent authority may, on application being made by the applicant or any other person entitled to act on a consent granted by the consent authority and subject to and in accordance with the regulations, modify the consent if:*
> - *a) it is satisfied that the development to which the consent as modified relates is substantially the same development as the development for which consent was originally granted and before that consent as originally granted was modified (if at all), and*
> - *b) it has consulted with the relevant Minister, public authority or approval body (within the meaning of Division 4.8) in respect of a condition imposed as a requirement of a concurrence to the consent or in accordance with the general terms of an approval proposed to be granted by the approval body and that Minister, authority or body has not, within 21 days after being consulted, objected to the modification of that consent, and*
> - *c) it has notified the application in accordance with:*
>   - *i. the regulations, if the regulations so require, or*
>   - *ii. a development control plan, if the consent authority is a council that has made a development control plan that requires the notification or advertising of applications for modification of a Development Consent, and*
> - *d) it has considered any submissions made concerning the proposed modification within the period prescribed by the regulations or provided by the development control plan, as the case may be.*
>
> *Subsections (1) and (1A) do not apply to such a modification.*

The proposed changes within this Modification Application would involve minimal environmental impact. Therefore, this Modification Application is being lodged under Section 4.55(1A) of the EP&A Act.

Additional impacts that may result from the changes in this Modification Application are assessed, in Section 6, below.

6 Assessment of Additional Impacts

6.1 Methodology

As part of the Development Application, a preliminary environmental risk assessment was conducted to identify key environmental matters that would require detailed assessment within the Environmental Impact Statement (**EIS**). With respect to the DP BESS, this risk assessment considered a BESS capacity of 50 MW/ 100 MWh and both construction and operation phases of the project. From this analysis, some environmental matters were deemed to be key issues on the basis that they had the potential, without suitable mitigation, to have a significant impact on the environment, all of which were addressed in the existing Development Consent.

The intent of this Modification is to increase the approved capacity of the DP BESS to 200 MW/ 400 MWh on the Site. Due to the capacity increase, Edify has performed an assessment of the potential additional and alternate key environmental matters resulting from this Modification.

A summary of the key environmental issues as applicable to the Modification request is provided in Section 6.2. The intent of the discussion is to demonstrate an understanding of the issues, provide a summary of the environmental assessment and propose likely mitigation measures for these key issues. The following environmental risks are considered to be key aspects:

- Biodiversity;
- Aboriginal Heritage;
- Traffic and Transport;
- Visual Amenity;
- Noise and Vibration; and
- Hazards and Bushfire Risk.

6.2 Key Environmental Impacts

6.2.1 Biodiversity

The DP BESS, and therefore the biodiversity impact of the installation, was considered within the originally approved development footprint of the Development Consent.

The DP BESS Site (as shown in Figure 1) was assessed as part of the Development Application as having plant community type (**PCT**) of PCT 45 (*Plains Grassland on Alluvial mainly clay soils in the Riverina Bioregion and NSW South Western Slopes*) in moderate to good-moderate condition (Figure 4). PCT 45 is not listed as an Endangered Ecological Community under the NSW BC Act or the Commonwealth EPBC Act. The area of PCT 45 that will be impacted by the DP BESS location is no greater than previously assessed, and therefore there will be no increase in impact.

One record of a Grey-crowned Babbler (listed as Vulnerable under the NSW TSC Act) was mapped in the vicinity of Lot 1 DP 1249830 as part of the EIS's Biodiversity Assessment. This threatened fauna species was found in the vegetation patch immediately to the west of the DP BESS site, in PCT 16, described as Black Box grassy open woodland wetland of rarely flooded depressions in South-Western NSW, in moderate to good – moderate condition. PCT 16 is not listed as an Endangered Ecological Community

under the NSW BC Act or the Commonwealth EPBC Act. This PCT and any associated fauna species will be avoided, with the development area for the location of the DP BESS not encroaching on the vegetation.

During construction of the DPSF, the area that makes up Lot 1 DP 1249830 was used as a construction site office and laydown area to store construction materials and equipment before installation or use in the solar farm construction. As such, the area was cleared as planned and has therefore already been factored into the biodiversity offset assessment for the overall development.

Therefore, the Modification will not increase the biodiversity impact of the overall development and does not alter the biodiversity offset credit calculations already performed under the Development Consent.

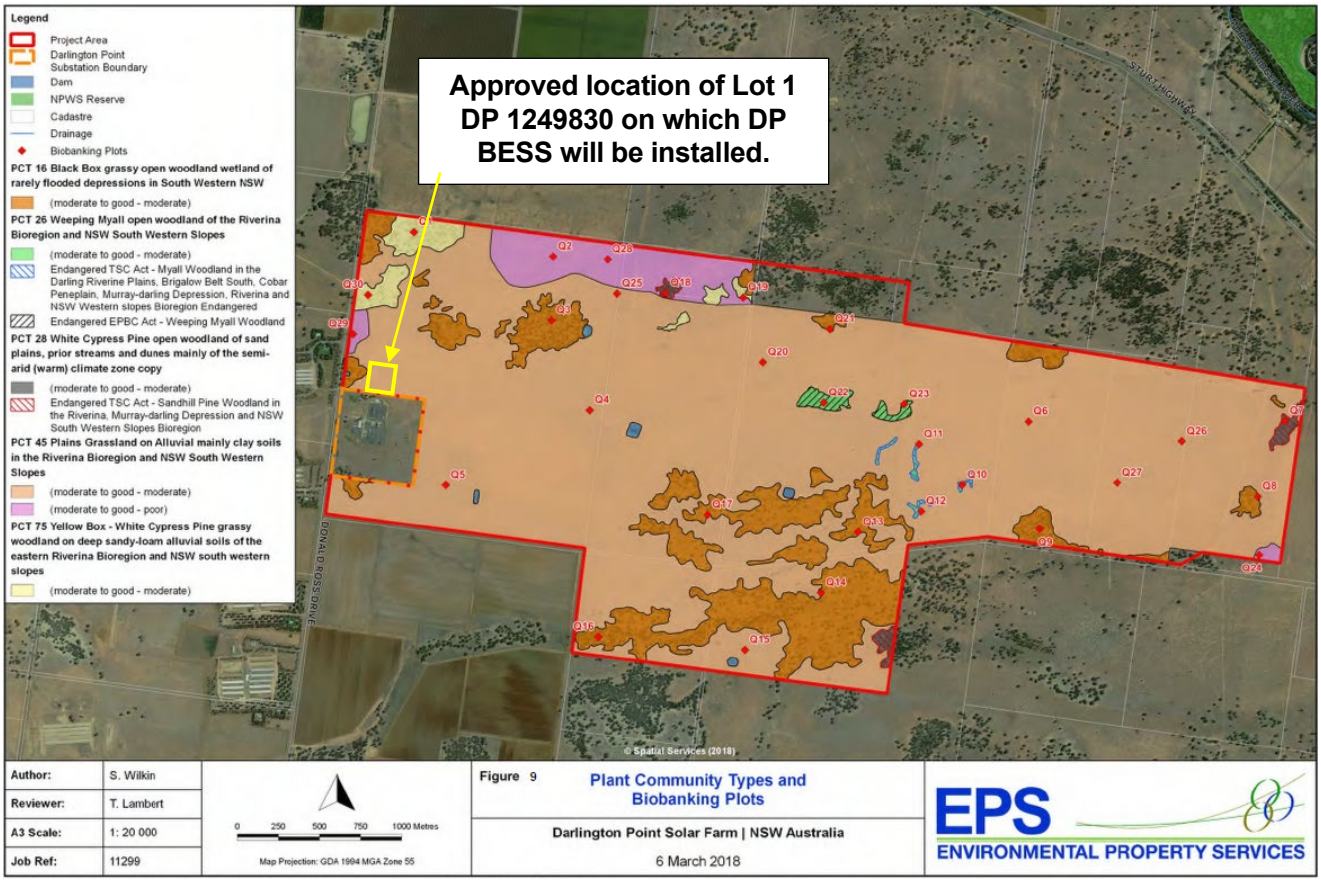

Figure 4 Development Consent - Plant Community Types and Biobanking Plots

6.2.2 Aboriginal Heritage

As part of the assessment conducted for the existing Development Consent, an Aboriginal cultural heritage assessment report (**CHAR**) was prepared for the proposed development area. The CHAR was prepared in accordance with the Secretary's Environmental Assessment Requirement, Office of Environment and Heritage (**OEH**) *Code of Practice for the Archaeological Investigation of Aboriginal Objects in New South Wales* and OEH *Aboriginal Cultural Heritage Consultation Requirements for Proponents 2010* and accompanied the EIS to support the application for Development Consent.

The CHAR identified ten Aboriginal archaeological sites within the study area, however none are located in or near Lot 1 DP1249830, where the DP BESS is to be sited, as shown in Figure 5 below. Therefore, the Modification will not result in any Aboriginal heritage impact.

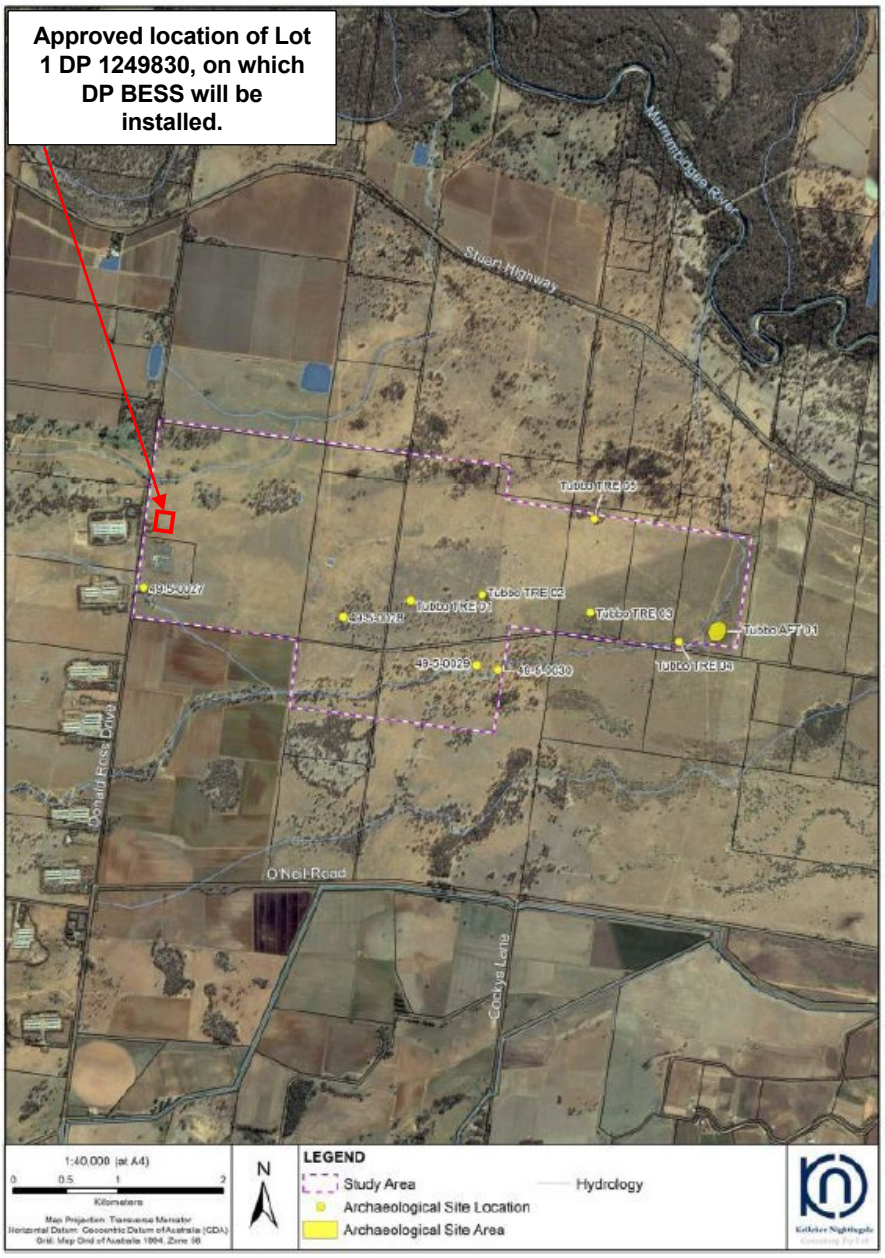

Figure 4. Identified Aboriginal archaeological sites within the study area

Figure 5 Identified Aboriginal archaeological sites within the Development Consent study area

6.2.3 Traffic and Transport

A Traffic Impact Assessment (**TIA**) was performed to support the original Development Application, including consideration of the DP BESS construction and operation periods. Under the proposed Modification, access for personnel, construction equipment and delivery of equipment to be installed on the DP BESS site is to remain through the approved entrance on Donald Ross Drive, which has undergone upgrades to support heavy vehicles numbers for the Development.

The increased capacity of the proposed DP BESS will result in increased quantities of BESS equipment to be delivered to site over a three to six months period, as well as additional construction personnel required during the construction period. There is not expected to be a material change to the operational period.

The Modification will require the delivery of types of equipment that is consistent with the approved TIA, but with increased quantities of containerised batteries/battery modules, inverter stations and transformers than previously envisaged. These quantities will remain low in the context of the whole Development, and particularly the deliveries required for the DPSF and therefore impacts of additional deliveries will be minimal.

The number of construction personnel on site at peak times during construction of the DP BESS is expected to rise to approximately 35, up from 20 as predicted in the original Development Application. Construction personnel will be allocated parking spots on the site during construction periods. This minor increase, and particularly in the context of significantly larger numbers of workers required during construction of the DPSF, will have a minimal impact on local traffic.

Based on Edify's assessment, the Modification will not impact traffic levels beyond those already considered within the Development Application and Development consent.

6.2.4 Visual Amenity

The DP BESS location is immediately to the north of, and adjacent to, the TransGrid Darlington Point Substation. Eight (8) sensitive receivers were identified in the EIS report (refer to Figure 7 further below). Of those 8 receptors, DPIE advised Edify it should consult with the owners of R2, R3, R4, and R5 regarding potential social impacts from the proposed modified DP BESS, including visual amenity. The nearest residential dwelling, R3, is located 272m from the closest corner of the DP BESS area. This residence is owned by the same landowner as R4 and R5 (as well as R6), which are located 732m and 1467m respectively from the nearest corner of the DP BESS site. R2 is located 1769m north of the nearest corner of the DP BESS site. Refer to Figure 3 (above in section 4.2) which illustrates the distances from the DP BESS site to the residences (R2, R3, R4, and R5).

The owners of these four (4) residences were contacted by Edify to discuss the proposed modification to the DP BESS facility and seek feedback/ concerns (if any). Neither of the landowners indicated any concern or issues relating to visual amenity of the proposed modified DP BESS (refer to Section 4.2 for consultation with the near neighbours).

The Visual Impact Assessment (**VIA**) in the EIS prepared for the SSD-8392 development application considered the solar array infrastructure, the proposed BESS facility, the existing overhead transmission lines present throughout the site and the existing industrial infrastructure and concluded the proposed infrastructure would not be dominant or present unacceptable contrast to the surrounding landscape. The height of battery containers/units will vary depending on the final technology selection but would be no higher than 5m above the platform level in the worst case. This is higher than the 3.3m indicated in the additional information to the original EIS (provided during the DA assessment period). For clarification, some of the associated infrastructure will be higher than the battery storage units, for example the switch gear and control pre-fabricated building is expected to be elevated ~3m above the ground level to a total height of ~6m high. Other ancillary infrastructure that will be higher than the battery storage units is the lightning mast/s. Detailed design will determine the number and positioning of lightning masts however it would be expected that the facility would consist of multiple masts up to 20m in height. Such infrastructure would appear as a minimal addition to similar or much larger infrastructure which already exists within the TransGrid Substation immediately adjacent to the south of the DP BESS Site

As assessed in the EIS, the area between the DP BESS location and the nearest dwelling (R3) is well vegetated, including a moderate to good condition patch of PCT 16 Black Box grassy open woodland containing mature vegetation, creating a natural visual buffer as well as potentially providing some noise attenuation. Each of the neighbouring dwellings considered in this report (R2, R3, R4, R5) are associated with screen planting from adjacent road corridors or differential private planting that disconnects the residence from paddocks or industrial land use. Furthermore, the land immediately to the south-east of R2

hosts a large dam which is elevated and would obstruct the view from R2 towards the solar farm and BESS. In short, the residences have vegetation and/or other structures around the dwellings, on fence lines, and/or between the DP BESS Site and the residence, creating a visual screen or obscuring the view of the DP BESS (Figure 3, in section 4.2 above, represents the best view of these inherent screening objects).

According to section 4.2 of the EIS VIA, the visual effect from the 13 viewpoints assessed (including those that most closely correlate with R2, R3, R4 and R5) indicate the neighbourhood sensitivity and magnitude of change would result in negligible to minor adverse effect during construction and operation of the proposed (solar farm and) BESS facility. In addition to the information presented in the EIS VIA, Edify has prepared a more detailed elevation map (refer to Figure 6 below) identifying the various spot elevations at each of the receivers (R2, R3, R4, R5) and the DP BESS Site. A review of the contour data (sourced from the Yanco 2kmx2km 1 metre Resolution Digital Elevation Model, NSW Foundation Spatial Data Framework) reveals there is less than 1m variation in elevation levels between the Site and all residences, with the nearest residence (R3), at 126.5m AHD, less than 0.5m higher than the Site, at 126.1-126.2m AHD. This would indicate the residences are not sufficiently elevated so as to have a view down or over the proposed DP BESS Site and would not be able to 'see through' the abovementioned vegetation/objects that currently obstruct potential view of the Site.

In summary, the visual impacts are not expected to increase due to the Modification and have not been raised as a concern by the nearest sensitive receivers (as supported by feedback received during consultation with nearby receptors described in Section 4).

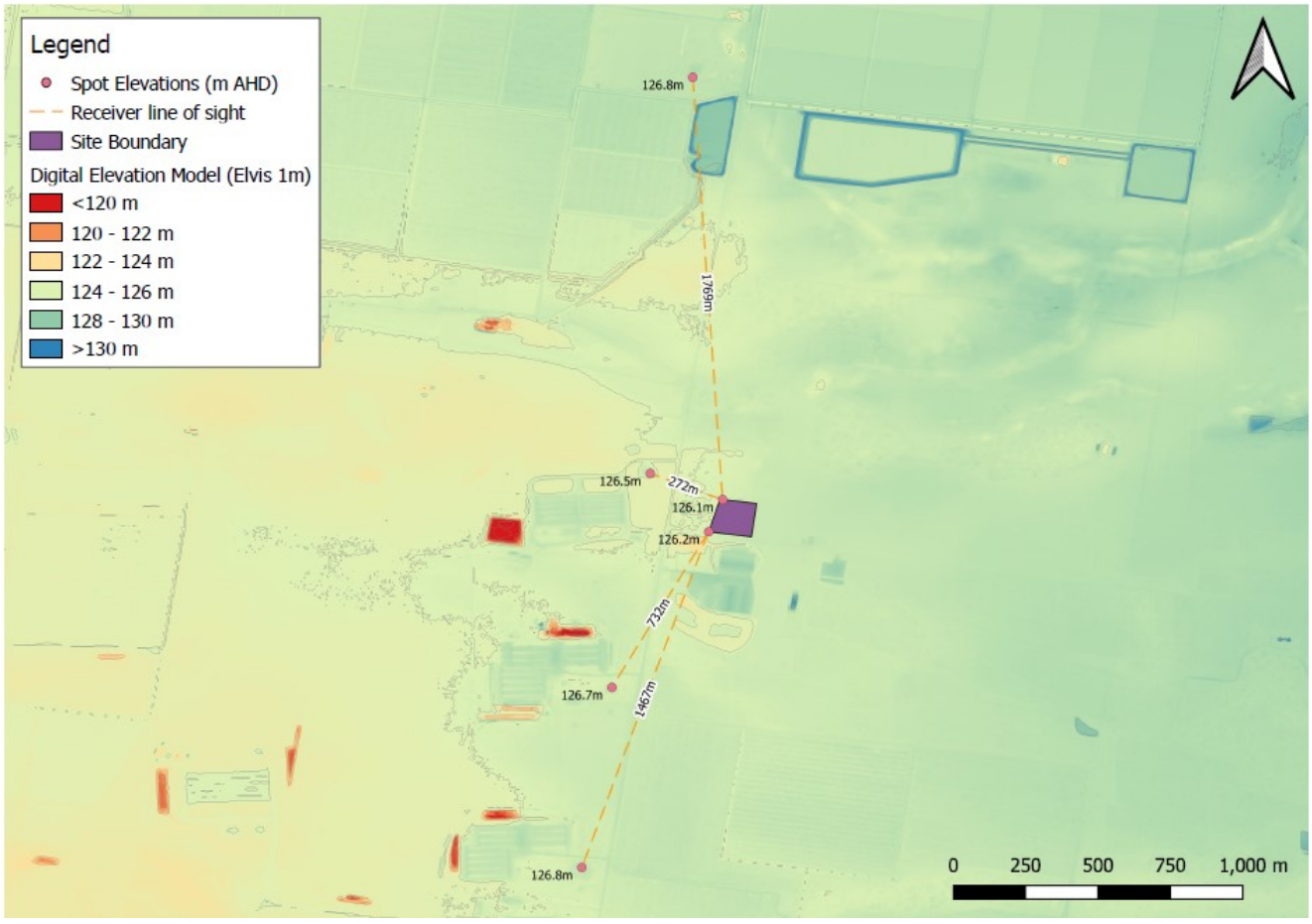

Figure 6 Elevation map showing spot elevations of the Site and Sensitive Receivers

6.2.5 Noise

The location of the DP BESS as shown in Figure 1 is adjacent to the TransGrid Darlington Point Substation, with nearby receptors identified as shown in Figures 3 & 7. Edify engaged Spectrum Acoustics to perform an updated noise study (Appendix A) to assess the impact of noise on the nearby receptors factoring in construction and operation of the DP BESS with increased capacity to support this Modification Application.

The original noise assessment performed by ARUP considered in the Development Consent addressed both construction and operational issues, and that a modification was approved to allow construction during weekend daylight hours, which we would expect to continue for the DP BESS construction period. The updated noise assessment by Spectrum Acoustics has used the original noise assessment as a base and considered the impact of the increased capacity at the DP BESS location.

The original noise assessment established criteria for maximum noise levels based on the *Industrial Noise Policy (2000)*, which has subsequently been replaced with the new *Noise Policy for Industry (2017)* resulting in an easing of noise thresholds from a regulatory perspective. However, for the purposes of the updated noise assessment, Edify has decided to use the previous (more stringent) criteria for the purposes of assessing the noise impact of the proposed Modification which is consistent with the original Development Application studies and the Development Consent. With respect to nearby receptors, the Spectrum Acoustics assessment has considered all nearby receptors previously reviewed, including the subset of specific receptors requested by DPIE through pre-modification consultation.

Spectrum Acoustics has determined that *"the cumulative noise emissions from the DPSF and the upgraded BESS [results in] levels that would remain below established criteria at all assessed receivers"* (Appendix B).

The area between the DP BESS location and the nearest dwelling is well vegetated, which is expected to provide some level of additional noise attenuation.

Per the above and consistent with the independent noise assessment conducted and nearby receptor consultation feedback (Section 4), the noise impacts are not expected to increase due to this Modification.

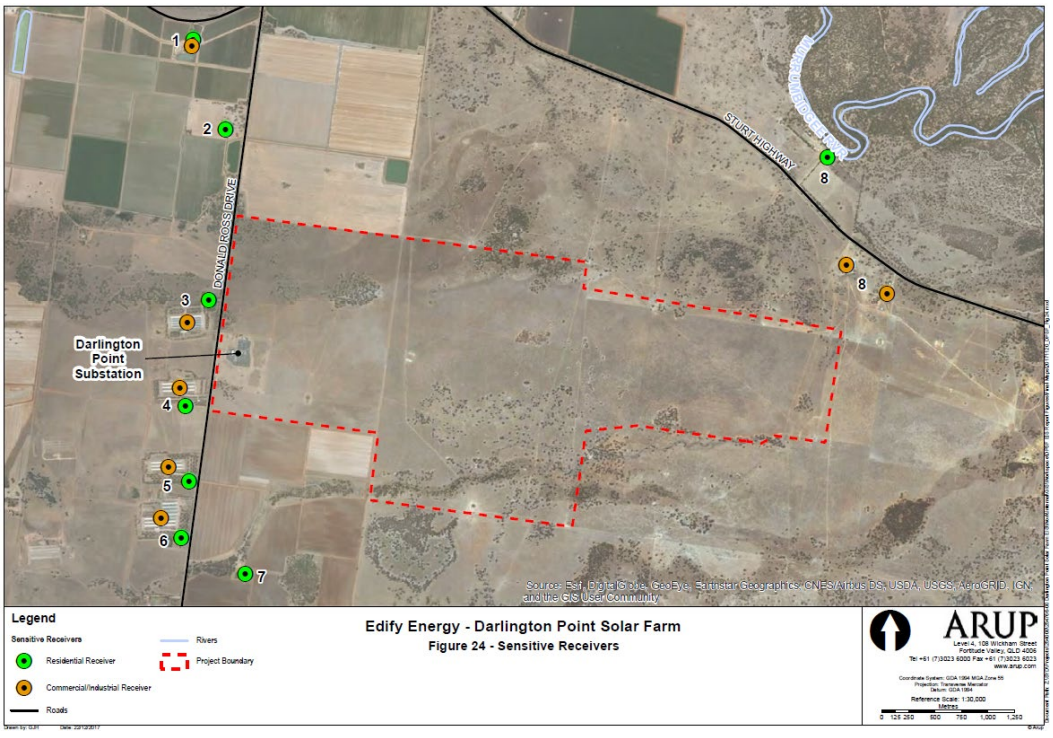

Figure 7 Development Consent - Sensitive Receivers

6.2.6 Hazards and Bushfire Risk

The Preliminary Hazard Assessment (**PHA**) for the project submitted as part of the original Development Application assumed a 100MWh BESS. As part of this Modification application, and to capture changes to the capacity of the DP BESS, Edify has engaged ARUP to perform an updated PHA which is included in Appendix B for reference.

The updated PHA has used a consistent approach to the assessment as the original study. The PHA identified a number of risks and has recommended mitigation measures to address those risks identified, including:

- Security breach leading to injury;
- Electrocution from an electrical facility;
- Injury to construction or operations personnel;
- Exposure to dangerous goods during a site emergency;
- Battery fire; and
- Battery explosion.

The risk of battery fire and/or explosion was assessed by ARUP as having potential to cause offsite impacts and was therefore carried forward for further quantitative analysis. The quantitative analysis has resulted in ARUP recommendations for minimum boundary set-back distances and minimum separation distances between battery modules/containers, which Edify has considered in the assessment of the DP BESS capacity and indicative layouts, and which Edify will set as restrictions in finalising the layout design.

The existing Development Consent Schedule 3, Condition 24 requires a Fire Safety Study to be completed at least one month prior to the construction of a battery storage facility at the Site. Edify believes the PHA prepared to support this Modification application satisfies the condition (S3, C24) and sufficiently addresses the *Hazardous Industry Planning Advisory Paper No. 6, 'Hazard Analysis'* (HIPAP 6).

The proposed Modification will not result in any significant changes to the bushfire risks associated with the construction and operation of the DPSF and DP BESS. Risk of fire starting from within the DP BESS site is addressed in the PHA above and further mitigated through recommended boundary setback and internal battery module/container separation distances. With respect to external bushfire risks, the bushfire management and mitigation measures outlined in the initial Development Application and approved Development Consent, which will include a bushfire hazard reduction plan and emergency response plans specific to the DP BESS, are considered sufficient to address the potential impacts of the Modification. No additional mitigation measures are required.

7 Conclusion

The Development Consent was obtained in December 2018 for a BESS of capacity 50 MW/ 100 MWh. Due to a shift in energy market conditions and improvement in BESS technologies, Edify is seeking approval to increase the capacity of the DP BESS to 200 MW/ 400 MWh on the Site.

This assessment outlines the Proponent's proposed Modification for the development of the DP BESS stage of the approved Development (SSD 8392). The Modification to the Development Consent proposed in this report is required to deliver an efficient, constructable and commercially viable battery system, with minimal environmental impacts.

This Modification Application (SSD 8392 - Mod 1) demonstrates there will be an equivalent environmental impact to that assessed for the original DA, and that the modification is justifiable and able to be approved.

8 References

Australian Energy Market Operator, 2020, *2020 Integrated System Plan*. Available from https://aemo.com.au/-/media/files/major-publications/isp/2020/final-2020-integrated-system-plan.pdf?la=en [Accessed 14 December 2020]

Australian Government, Australian Bureau of Statistics, 2020, *Employment in Renewable Energy Activities, Australia*. Available from https://www.abs.gov.au/statistics/labour/employment-and-unemployment/employment-renewable-energy-activities-australia/latest-release [Accessed 14 10 2020]

Australian Government, Clean Energy Regulator, 2018, *Renewable Energy Target*. Available from http://www.cleanenergyregulator.gov.au/RET/About-the-Renewable-Energy-Target [Accessed 14 10 2020]

Australian Government, Department of Industry, Science, Energy and Resources, 2020, *International climate change commitments*. Available from https://www.industry.gov.au/strategies-for-the-future/australias-climate-change-strategies/international-climate-change-commitments [Accessed 14 10 2020]

Australian Government, Department of Industry, Science, Energy and Resources, 2020, *Quarterly Update of Australia's National Greenhouse Gas Inventory: March 2020*. Available from https://www.industry.gov.au/sites/default/files/2020-08/nggi-quarterly-update-march-2020.pdf [Accessed 9 October 2020]

NSW Government, 2020, *New South Wales Electricity Strategy*. Available from https://energy.nsw.gov.au/government-and-regulation/electricity-strategy [Accessed 08 01 2020]

NSW Government, 2020, *NSW Net Zero Plan Stage 1: 2020-2030*. Available from https://www.environment.nsw.gov.au/topics/climate-change/net-zero-plan [Accessed 8 01 2021]