Amendment Report

Forest Glen Solar Farm

April 2022

Project Number: 22-029

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Executive summary

Background and aims

The Forest Glen Solar Farm is located approximately 16 kilometres (km) west of Dubbo, NSW. It is located within the Dubbo Regional Local Government Area (LGA) and declared Central-West Orana Renewable Energy Zone. The proposed Forest Glen Solar Farm involves the construction, operation and decommissioning of a ground-mounted PV 110 Megawatt (MW, DC) (90MW AC equivalent) solar array.

The Environmental Impact Statement (EIS) provided a detailed analysis of the potential environmental (including social) impacts of the Forest Glen Solar Farm. The EIS was lodged and placed on public exhibition from 2 December 2021 to 20 January 2022.

This Amendment Report has been prepared to fulfil the requirements of Schedule 1 of the *Environmental Planning and Assessment Act 1979* and in accordance with the *State Significant Development Guidelines – Preparing an amendment report* (NSW DPIE, 2021). The key purpose of the Amendment Report is to present the amendments of the project and where required, to assess the economic, environmental and social impacts of the amended project. This is intended to help the community, councils, government agencies and the consent authority gain a better understanding of the proposed amendments and their impacts so they can make informed submissions (if the report is exhibited) or decisions on the merits of the amended project (NSW DPIE, 2021).

No changes have been made to the areas proposed to be impacted (the Development Footprint), proposed project infrastructure, construction or operational parameters proposed since its public exhibition in December 2021 - January 2022.

However, several clarifications and updates to the mitigation measures proposed in the EIS have been made in response to the community and agency submissions to the EIS. The Submissions Report has been completed (NGH 2022) and lodged concurrent with this Amendment Report. The Submissions Report contains the detailed responses to all submissions received, further consultation undertaken since the EIS exhibition and updates to specialist reports, where required, to reflect updated commitments. These are not repeated in this Amendment Report.

Project changes

The Forest Glen Solar Farm Proposal remains generally as described in Section 4 of the EIS. However, two key changes have been made in response to public and agency submissions received during the exhibition period.

These changes include:

- Committing to the establishment of a visual set-back from one receiver.
- Committing to the establishment of a right of way carriageway across an additional lot.

In total, ten updates to the mitigation measures proposed in the EIS have been made in response to the community and agency submissions to the EIS. No other project changes have been made.

The changes do not create any new or increased impacts. They would improve the project by reducing visual impacts and creating more legal security around site access. Additional mitigation measure updates have been made in specific consideration of agency submissions.

Updated project justification

The objectives, benefits and strategic need of the Forest Glen Solar Farm remain consistent with those outlined in the EIS.

The EIS, SR and this amendment report indicate that the proposal can be approved, subject to the identified mitigation measures, as

- The proposal meets relevant planning requirements
- The environmental risks associated with the proposal are well understood and manageable.

The Forest Glen Solar provides a balance between technological, energy and environmental aspects, while retaining the flexibility required in the final design stage of the proposal. Furthermore, the proposal is consistent with the principles of ESD and forms an important part of Australia's transition to renewable energy generation. It is considered justifiable and acceptable.

1. Introduction

1.1 Background

The Forest Glen Solar Farm is located approximately 16 kilometres (km) west of Dubbo, NSW. It is located within the Dubbo Regional Local Government Area (LGA), and Central-West Orana region, which has been proposed as a Renewable Energy Zone (REZ). REZs are zones with high renewable energy resource potential that will be developed to encourage new electricity generation projects, supported by existing transmission strength and capacity (AEMO, 2020). The Central-West Orana region has been selected as a pilot REZ as it benefits from relatively low transmission build costs due to its proximity to the existing backbone transmission network, and it has a strong mix of energy resources.

Dubbo is the closest major regional centre, with a population of 38,943 people (ABS, 2016). The proposal is located within the locality of Minore, which had a population of 153 people (ABS, 2016). A locality map and regional geographic context of the Proposal is illustrated in Figure 1-1 below. Significant features in the locality include the railway station at Minore Village (closed to passengers in 1975) and Minore Falls Reserve on the Macquarie River (8km north of proposal site, a popular recreation area). The Sappa Bulga National Park is 2.9km southeast of the proposal site. The National Park is a small reserve covering 121 hectares (ha) of native remnant forest with no formal recreational areas. The land immediately surrounding the proposal site includes agricultural land with extensive areas of remnant vegetation.

The proposed Forest Glen Solar Farm involves the construction, operation and decommissioning of a ground-mounted PV solar array. Approximately 110 megawatts (MW, DC) (90MW AC equivalent) would be generated and supplied directly to the national energy grid. The proposal would generate enough clean, renewable energy for about 40,000 average NSW homes, displacing approximately 164,000 metric tonnes of carbon dioxide, currently generated by non-renewable sources per annum.

The Forest Glen Solar Farm would be located on Lot 6 DP 755102 and accessed via Delroy Road, which includes Crown Land, Lot 1 DP1198911, Lot 51 and Lot 52 DP755094. Of the 789ha proposal site, the Development footprint would represent approximately 444ha which would be developed for the solar farm and associated infrastructure. X-Elio proposes to lease the Development footprint part of the proposal site for the solar farm.

The Environmental Impact Statement (EIS) provided a detailed analysis of the potential environmental (including social) impacts of the proposal. Issues of most concern to the public during pre-exhibition consultation were included as well as specialist studies required by the SEARs. Key specialist studies provided in the EIS included:

- Visual amenity and landscape character
- Noise and vibration
- Biodiversity
- Traffic, transport and safety

The 444 ha Development footprint presented in the EIS had been refined in response to the findings of the environmental assessments, site constraints and consultation with relevant government agencies, the community, and other stakeholders in order to minimise the environmental and social impacts of the project. The Development footprint presented in the EIS excludes 36.9ha, which are designated as ‘exclusion areas’. They represent 28.5ha of high biodiversity value land and 8.4ha of waterways and waterway buffers. The remaining 345ha of the Proposal site, adjacent to the Development footprint, includes areas that will likely continue to be used for agriculture including cropping and grazing, by the current landowner. No changes to these areas have been made since the EIS exhibition; they remain the same.

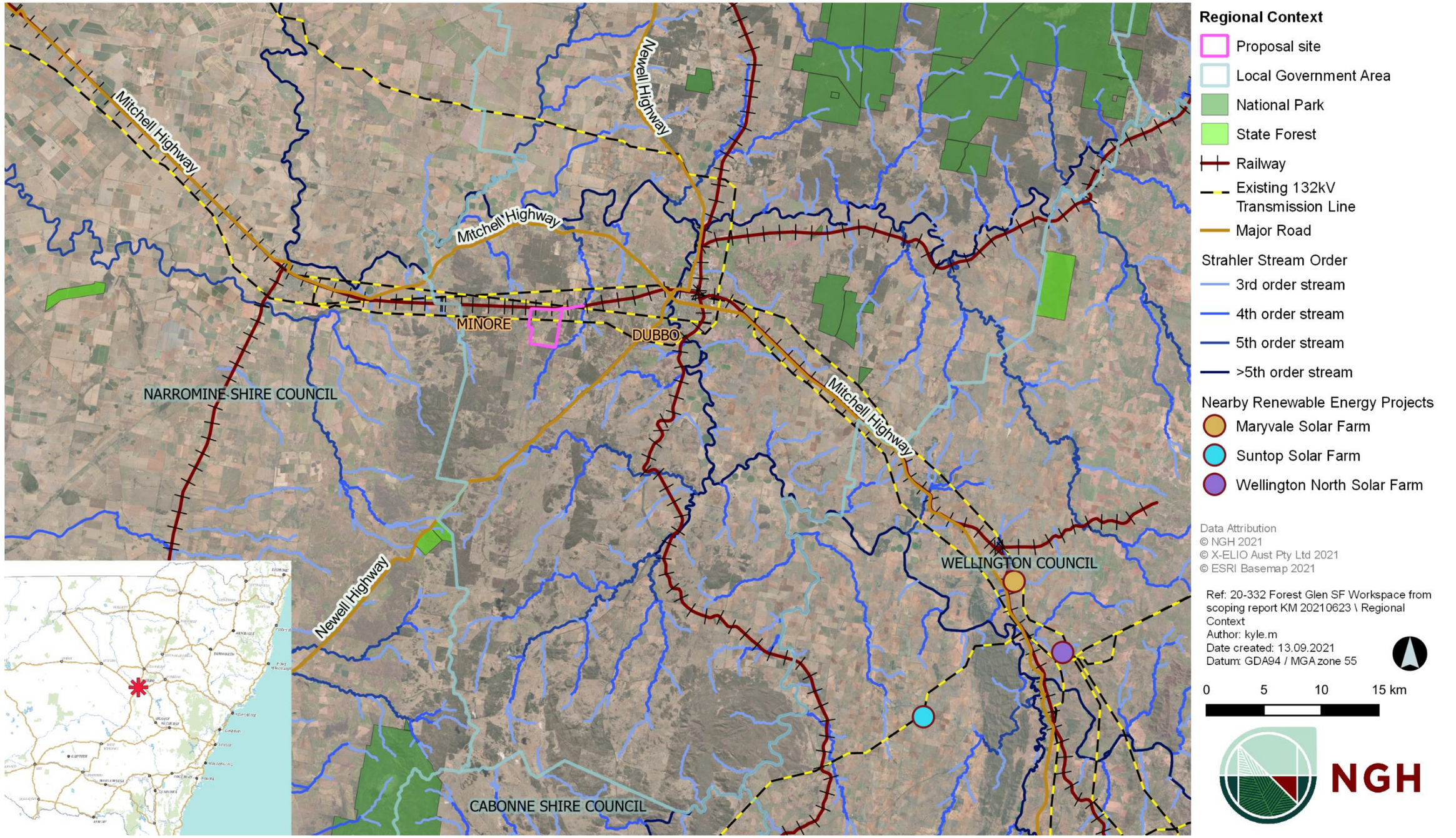

Figure 1-1 Locality and regional context of the proposed Forest Glen Solar Farm, as presented in the EIS.

1.2 Purpose of this report

NGH has prepared this Amendment Report on behalf of the proponent to fulfil the requirements of Schedule 1 of the *Environmental Planning and Assessment Act 1979.* This Amendment Report has been prepared in accordance with the *State Significant Development Guidelines – preparing an amendment report* (NSW DPIE, 2021). The key purpose of the Amendment Report is to:

- Present the amendments of the project to assess the economic, environmental and social impacts of the amended project and to help the community, councils, government agencies and the consent authority to get a better understanding of the proposed amendments and their impacts so they can make informed submissions (if the report is exhibited) or decisions on the merits of the amended project (NSW DPIE, 2021).

No changes have been made to the areas proposed to be impacted (the Development Footprint), proposed project infrastructure, construction or operational parameters proposed since its public exhibition in December 2021 and January 2022. However, several clarifications and updates to the mitigation measures proposed in the EIS have been made in response to the community and agency submissions to the EIS. This report summarises the changes.

Relationship to other reports

The Submissions Report has been completed (NGH Pty Ltd, 2022) and lodged concurrent with this Amendment Report. The Submissions Report contains the detailed responses to all submissions received, further consultation undertaken since the EIS exhibition and updates to specialist reports, where required, to reflect updated commitments. These are not repeated in this Amendment Report.

2. Strategic context

The strategic context of the proposal remains consistent Section 2.2 (Strategic Need) and Section 2.3 (Proposal Benefits) in the Forest Glen Solar Farm EIS (NGH Pty Ltd, 2021).

3. Description of amendments

The Forest Glen Solar Farm Proposal remains generally as described in Section 4 of the EIS. However, two key changes have been made in response to public and agency submissions received during the exhibition period.

These changes include:

- Committing to the establishment of a visual set-back from one receiver.
- Committing to the establishment of a right of way carriageway across an additional lot.

In total, ten updates to the mitigation measures proposed in the EIS have been made in response to the community and agency submissions to the EIS. No other project changes have been made. These changes are described below and the updates to mitigation measures set out in Section 6.

3.2 Establishing a new visual set-back area for R6

Following landowner consultation, the Proponent has committed to establishing a specific visual impact setback area on the western edge of the Proposal site to mitigate the visual impact of permanent above ground operational infrastructure to Receiver R6.

This visual setback area is now displayed as part of an updated indicative infrastructure layout for the Proposal in Figure 3-1 below and is reinforced in the updated visual impact mitigation commitments. The assessed Development footprint for which development consent is sought remains unchanged from the EIS, as construction works and the establishment of permanent tracks may still be required within this set back area.

3.3 Right of way carriageway

As described in the EIS, Delroy Road would be the primary construction and operational site access road to the Proposal. Delroy Road has recently been gazetted as a local Council road. However, portions of it traverse private freehold (Lots 51/ DP755094 and Lot 52/DP755094). Refer Figure 3-2.

Following Council consultation, the Proponent has sought and obtained landowner consent to establish a right of way carriageway across these lots, to ensure legal access to the Proposal site. An additional land owner consent for right of access through the affected private lots has been provided to DPE with this Amendment Report.

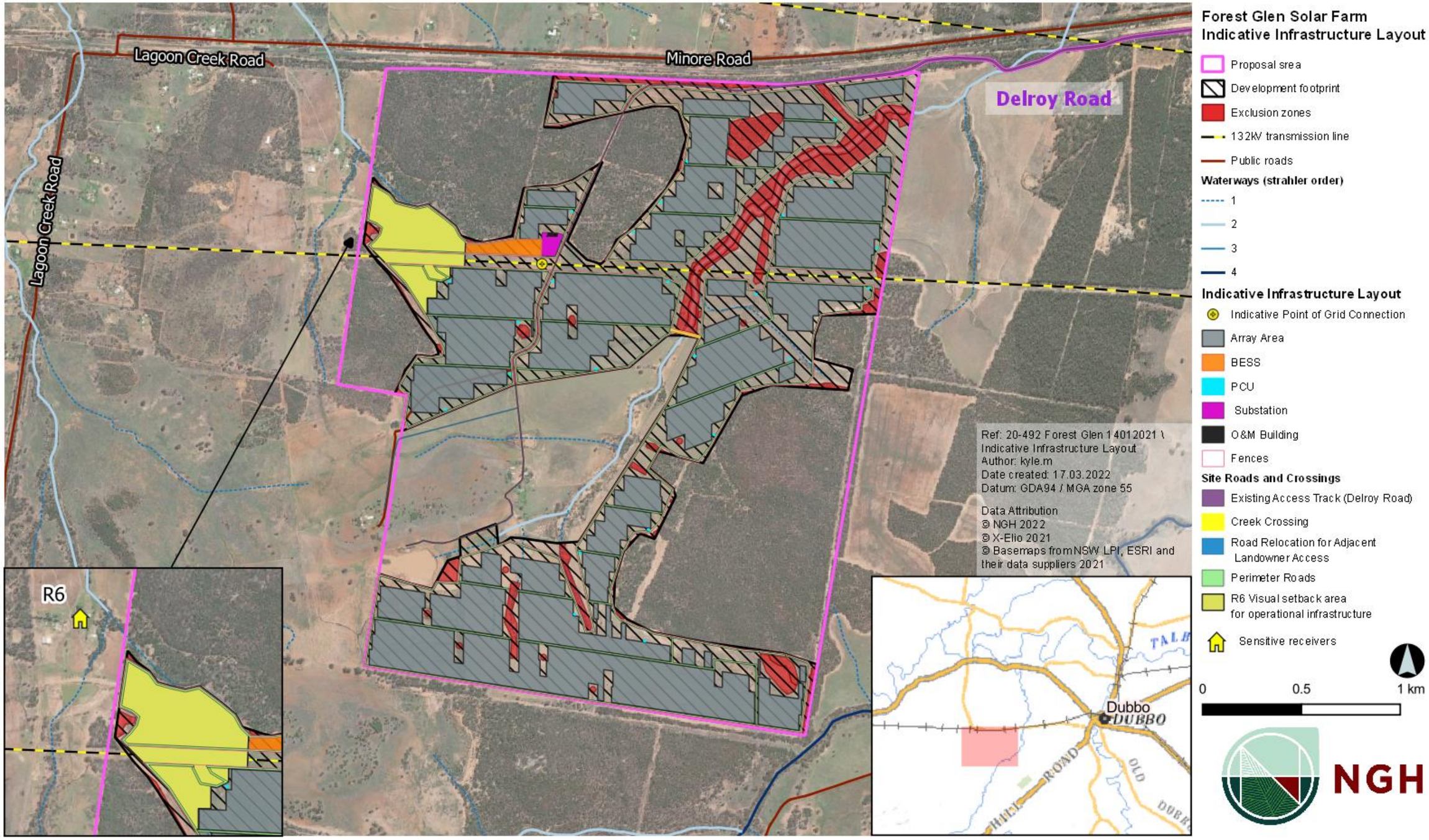

Figure 3-1 Updated indicative infrastructure layout for the Forest Glen Solar Farm. The Visual set-back area for R6 is located on the western boundary of the Proposal area. The Development footprint remains unchanged.

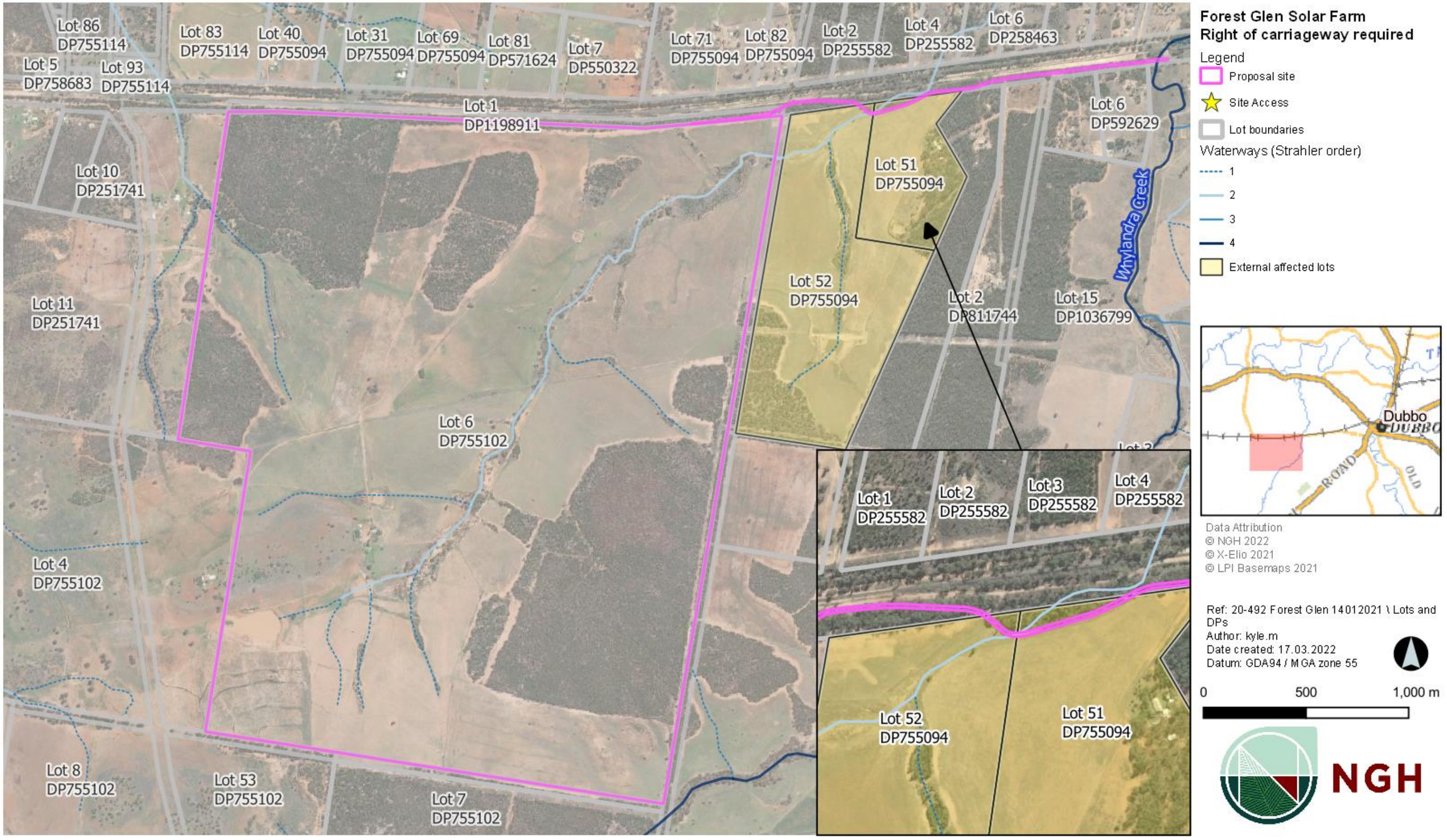

Figure 3-2 Lots 51/ DP755094 and Lot 52/DP755094. Right of carriageway now included for Lot 51.

4. Statutory context

The statutory context of the proposal remains consistent with section 5 of the Forest Glen Solar Farm EIS (NGH Pty Ltd, 2021), except in relation to the following legislation revisions that have occurred since the EIS was lodged:

- The State Environmental Planning Policy (State and Regional Development) 2011 is now the **State Environmental Planning Policy (Planning Systems) 2021**
- The State Environmental Planning Policy (Infrastructure) 2007 is now the **State Environmental Panning Policy (Transport and Infrastructure) 2021**
- The Primary Production and Rural Development SEPP 2019 is now the **State Environmental Planning Policy (Primary Production) 2021** and the **State Environmental Planning Policy (Resources and Energy) 2021**

The changes do not affect the permissibility of the proposal:

- The Forest Glen SF would have an estimated capital investment cost greater than $30 million and isherefore considered SSD under Part 4 of the EP&A Act.
- The proposed Forest Glen SF would be located within a rural zone (RU1 Primary Production), under theDubbo LEP. The proposal is therefore permissible with consent under the TISEPP.
- No Biophysical Strategic Agricultural Land (BSAL) as defined in Chapter 2 of Resources and Energy SEPP occurs within the boundaries of this Proposal.

The State Environmental Planning Policy (Mining, Petroleum Production and Extractive Industries) 2007 and State Environmental Planning Policy No. 33 – Hazardous and Offensive Development have now been consolidated into chapters of the **State Environmental Planning Policy (Resilience and Hazards) 2021.** Specific to the objectives of the State Environmental Planning Policy (Resilience and Hazards) 2021, the proposed Battery and Energy Storage System has a capacity of approximately 25MW/25MWh and as such the SEARs have not required a Preliminary Hazard Assessment as part of the EIS.

Schedule 2 of the Environmental Planning and Assessment Regulation 2000 has been revised to refer to **Section 173 of the Environmental Planning and Assessment Regulation 2021.** Specific to the objectives of the State Environmental Planning Policy (Primary Production) 2021:

- Construction the Forest Glen Solar Farm would not be detrimental to the economic use of the land in question. Instead, the solar farm would represent a higher value land use diversification with no adverse impacts to future agricultural capacity
- The land capability of the site would be retained, with reference to baseline soil testing prior to construction and rehabilitation commitments post decommissioning. The proposal site is not mapped as Biophysical Strategic Agricultural Land (BSAL). Post decommissioning the site may return to grazing intermittent cropping (currently oats and sheep grazing).
- For the operational life of the solar farm, the resting/shading impacts of the solar farm combined with operational management to protect groundcover would not significantly alter soil health and capability, in comparison to current agricultural activities, particularly in drought conditions.
- The small size of the site does not represent a significant proportion of the local agricultural economy and would therefore not affect harvest logistics in the locality.
- The Forest Glen SF infrastructure layout is designed to avoid impacts to native vegetation, biodiversity and waterways by avoiding high quality native habitats and riparian areas.
- The economic benefits of the proposal will exceed benefits of the returns received from current agricultural activities in terms of employment during operation, and other economic stimulus, occurring mostly during construction.

The proposal is would not impact on water supply in irrigation areas or aquaculture. As such the proposal is considered compatible with the relevant aims of this policy.

5. Consultation

All consultation undertaken with the community and government agencies since public exhibition of the EIS is documented within the Submissions Report (NGH 2022). Consultation specific to the amendments discussed in this report is extracted below.

5.2 Community consultation

Community consultation related to further addressing the visual impact on receiver R6 and establishment of a right of carriageway are outlined in Table 5-1.

Table 5-1 Community consultation specific to R6 visual impacts

Receiver	Date	Consultation comments
Name withheld (SE-35251041; R6)	1/03/2022	X-Elio spoke with the receiver and her husband over a video meeting to discuss concerns they raised around the visual impact of the Proposal. Mitigation options were discussed, including vegetation screening, wire-frame analysis and the possibility to move certain parts of the plant infrastructure, including panels.
Name withheld (SE-35251041; R6)	07/03/2022	X-Elio spoke with the receiver over a video call. The discussion covered three parts of the plant in which X-Elio were able to move above ground infrastructure (including solar panels) to another area of the site in order to remove visual impact from the areas of concern identified by the receiver. Refer to the submissions report for detailed response. The receiver verbally indicated that this would be acceptable and would be sufficient to cover their objection placed to DPIE.

5.3 Agency consultation

Consultation related to establishing a right of carriageway with Dubbo Regional Council is outlined in Table 7-2.

Table 5-2 Agency consultation results

Date	Consultation comments
8th *March, 2022*	X-elio and NGH met with representatives from DRC to discuss and workshop the concerns raised by Council during the submissions process. Items discussed included Site access arrangements
16th March, 2022	X-elio discussed DRC's site access concerns with Council's Building and Development Services Manager.

6. Assessment of impacts

The changes detailed in Section 3 of this Amendment Report do not create any new or increased impacts. They would improve the project by reducing visual impacts and creating more legal security around site access. Additional mitigation measure updates have been made in specific consideration of agency submissions.

6.2 Establishing a new visual set-back area to mitigation impacts to receiver R6

Specific factors considered in assessing impacts on R6 included:

- The elevation of the residence is approximately 288m ASL.
- The elevation at the site's closest boundary is approximately 291m ASL.
- The elevation rises to approximately 320m ASL some 400m from the site boundary and then falls to the east, which would obscure views of the eastern half of the site from this location.
- The residence (R6) is located 180m west of the proposal site boundary and 306m from closest panel infrastructure (excluding perimeter fencing).
- The trees and shrubs on the adjacent land appear well over 2m in height are located close to the receiver and are therefore highly effective in screening the views from the residence toward the site – with the exception of any gaps.

In this gently undulating terrain, the existing vegetation screening and structures on the receiver's property will be highly effective in blocking views to the majority of the site's infrastructure. The distance to the receiver will ensure the low profile structures are not highly visible from the residence.

It is acknowledged however, that the screening provided by this vegetation and structures are not located on the proposal site and therefore they cannot be controlled by the project. Additionally, there is a gap in the screening in front of the residence.

In order that the project can exert more control over its impacts and provide more confidence in relation to them to this receiver a wire frame was prepared for the receiver. The receiver was shown the wireframe with details explaining the methodology and results. The wire frame model has also been provided separately to DPE and shows from R6 the landform is very slightly undulating with the centre of the site has slightly elevated area. Only panels west of the elevated area are visible to R6. Panels further east are screened by the topography.

The results of the wireframe confirm that in this low relief terrain that the low profile infrastructure has a minor impact on the field of view, vertically, from R6. The wire frame is also useful to understand the horizonal extent of the array that will be visible from this location (in the absence of any screening effect of existing or proposed vegetation or structures). It confirms that about 60 degrees from a possible 180 degree view is perceivable, in the absence of existing or proposed vegetation or structures. The aerial photo inset shows clearly that, even disregarding the offsite vegetation near to the receiver, that the forested areas on the solar farm site will further limit the horizonal extent by a about 20 degrees, bringing extent to around 40 degrees.

In summary, topography alone indicates that the house is located on flat terrain and is surrounded by gentle undulations which will play an important role in screening views to the east/northeast. Aerial imagery indicates riparian vegetation associated with a creek line to the east and southeast of the dwelling and this will play an important role in screening views towards the project. In addition to this, dense vegetation associated within the project site further to the east will also screen views in this direction. Based on a desktop assessment utilising a wire frame diagram, aerial imagery and photographs taken from the site by NGH, Moir LA has concluded visibility of the Project would be minimal. Intervening vegetation is likely to screen views to the project.

In consultation with the receiver however, the Proponent has made an additional commitment to establish a visual set-back area to manage the operational visual impacts of the project on receiver R6. No above aground operational infrastructure, including solar panel arrays, would be constructed within this set-back area. This set back is effectively an exclusion zone to manage the operational impacts of the project on this receiver. Compliance with the set back commitment is shown in the updated indicative layout presented in Section 3.1 and an additional mitigation measure will now be committed to:

- ***No above ground operational infrastructure would be constructed within the visual set-back area for R6 as mapped in*** Figure 3-1***. This set back is included manage the operational visual, glare and glint impacts of the project on this receiver.***
- **No security lighting to be installed on this perimeter of the project, within 500m of the residence (R6).**

6.3 Requesting landowner consent to a right of carriageway where Delroy Road deviates into private lots

Delroy Road has recently been gazetted as a local Council road. However, portions of it traverse private freehold (Lots 51/ DP755094 and Lot 52/DP755094*)*. Refer Figure 3-2. Dubbo Regional Council have stated that it will be necessary for 'Rights of Carriageway' to be created to provide the landowner with legal access to the Proposal site. Following Council consultation, the Proponent has sought and obtained landowner consent to establish a right of carriageway , to ensure legal access to the Proposal site across these sections.

There are no additional impacts generated by this action. There is no material change to the Delroy Road carriageway beyond what is described in the EIS, and landowner consents have been provided where the road traverses private freehold (Lots 51/ DP755094 and Lot 52/DP755094).

6.4 Strengthened mitigations to provide certainty in response to submissions raised

Ten mitigation measures in the EIS have been revised in response to submissions raised by agencies and public submissions. The table below shows all mitigation measures that have been updated, removed or added since the EIS was submitted. These are in specific response to community and agency requests as fully detailed within the Submissions Report (NGH 2022) and do not constitute project changes, as such. The consolidated and updated list of measures is appended, Appendix A.

Table 6-1 Mitigation measures which have been revised since the EIS exhibition

ID	Safeguards and mitigation measures	C	O	D
Visual amenity and landscape character				
V5	***No above ground operational infrastructure would be constructed within the visual set-back area for R6 as mapped in Figure 3-1 (of the submissions report). This set back is included manage the operational visual, glare and glint impacts of the project on this receiver.***	C	O	
V6	**No security lighting to be installed on this perimeter of the project, within 500m of the residence (R6).**	Design		
Compatibility with existing land uses				
~~**LU4**~~	~~**Consultation with DPIE-Crown Lands would be ongoing, and the following would be undertaken:**~~ ~~**Prior to construction, a permit will be applied for to allow construction to commence within Delroy Road Crown road.**~~	~~**PC**~~		
Biodiversity (Flora and fauna)				
B10	**A preclearance survey would be conducted for *Indigofera efoliata* between September-October, in all areas of Zone 1 PCT 255, prior to project commencement. If this species is detected, all individuals (including an appropriate buffer) would be avoided, in consultation with BCS.**	**C**		
Traffic, transport and safety				
T7	**Prior to transporting any oversized or over mass loads, the applicant shall obtain a permit for an oversized and over mass load from the RMS Special Permits Unit in Glen Innes.**	C		D

ID	Safeguards and mitigation measures	C	O	D
Bush fire				
BF12	Prior to operation of the solar farm, **a comprehensive Emergency Response Plan (ERP) is to be developed for the site** in consultation with the RFS and Fire and Rescue NSW. This plan must include but not be limited to: • Specifically addresses foreseeable on site and off site fire events and other emergency incidents **(e.g. fires involving solar panel arrays, bushfires in the immediate vicinity or potential hazmat incidents).** • **Detail the appropriate risk control measures that would need to be implemented in order to safely mitigate potential risks to the health and safety of firefighters and other first responders (including electrical hazards).** Risk control measures would include the level of personal protective clothing required to be worn, the minimum level of respiratory protection required, decontamination procedures, minimum evacuation zone distances and a safe method of shutting down and isolating the PV system (either in its entirety or partially, as determined by risk assessment). • **Outline other risk control measures that may need to be implemented in a fire emergency due to any unique hazards specific to the site.** • **T**wo copies of the ERP are stored in a prominent 'Emergency Information Cabinet' which is located in a position directly adjacent to the site's main entry point/s. Once constructed and prior to operation, the operator of the facility would contact the relevant local emergency management committee (LEMC).	PC,C	O	
B14	**Prior to operation, a Fire Safety Study (FSS) will be undertaken to ensure that the fire prevention, detection, protection and firefighting measures are appropriate to the specific fire hazards and adequate to meet the extent of potential fires from the BESS. The FSS will considers the operational capability of local fire agencies and the need for the facility to achieve an adequate level of on-site fire and life safety independence The FSS will be developed in accordance with the requirements of Hazardous Industry Planning Advisory Paper No.2 (HIPAP No.2) and consultation with FRNSW.**		**O**	

ID	Safeguards and mitigation measures	C	O	D
Aboriginal Heritage				
AH4	In the unlikely event that human remains are discovered during the construction of the Forest Glen Solar Farm, **all works must cease**, and the **NSW Police must** be notified immediately. Notification of Heritage NSW must occur once the NSW Police have been informed.	C	O	D
Resource and waste generation				
WR1	A Waste Management Plan (WMP) would be developed **in consultation with Dubbo Regional Council** to minimise wastes. It would include but not be limited to: • Identification of opportunities to avoid, reuse and recycle, in accordance with the waste hierarchy. • Quantification and classification of all waste streams. • Provision for recycling management onsite. • Provision of toilet facilities for onsite workers and identify that sullage would be disposed of (i.e., pump out to local sewage treatment plant). • Tracking of all waste leaving the site. • Disposal of waste at facilities permitted to accept the waste. Requirements for hauling waste (such as covered loads).	C	O	D
Hazardous materials and development				
H4	**Prior to operation, a Fire Safety Study (FSS) will be undertaken to ensure that the fire prevention, detection, protection and firefighting measures are appropriate to the specific fire hazards and adequate to meet the extent of potential fires from the BESS. The FSS will considers the operational capability of local fire agencies and the need for the facility to achieve an adequate level of on-site fire and life safety independence The FSS will be developed in accordance with the requirements of Hazardous Industry Planning Advisory Paper No.2 (HIPAP No.2) and consultation with FRNSW.**		**O**	

7. Updated justification in consideration of project amendments

7.2 Benefits and needs for the proposal

The Forest Glen Solar Farm has been designed with the following objectives, as set out in the EIS:

- Select a site that is suitable for solar PV generation, connection to the grid network and environmental constraints
- Assist to mitigate the effects of climate change through the transition to renewable energy.
- Meet and exceed all relevant environmental and regulatory requirements for the proposal, in collaboration with key stakeholders.
- Provide local and regional employment opportunities and other social benefits during the construction and operation of the facility.
- Include on site energy storage to support the high voltage transmission network.

The development of the renewable energy source on the Forest Glen SF proposal site would:

1) Assist the NSW and Commonwealth Governments to meet Australia's renewable energy targets.
2) Provide a clean and renewable energy source to assist in reducing greenhouse gas emissions.
3) Generate electricity that have a minimal negative impact on cultural and environmental impacts.
4) Generation of enough clean, renewable energy for about 40,000 average NSW homes per annum.
5) Displace approximately 164,000 metric tonnes of carbon dioxide, currently generated by non-renewable sources per annum.
6) the area where the Forest Glen solar farm is proposed, has been identified by the AEMO as a Renewable Energy Zone (REZ), and if approved, the proposal would provide electricity close to an identified consumption centre, thus, providing local and regional employment opportunities and other social benefits during all stages of the project.

7.3 Ability to be approved

The EIS, Submissions Report (NGH 2022) and this Amendment Report demonstrate that the proposal can be approved, subject to the identified mitigation measures. In summary, this is because:

- The proposal meets relevant planning requirements.
- The environmental risks associated with the proposal are well understood and manageable.

Specifically:

- The proposal has demonstrated consideration of avoidance and minimisation of key environmental features as part of the layout and mitigation strategy development. In response to the site's key constraints, the proposal:
- Avoided higher quality areas of native vegetation onsite including:
    - 12.9ha of PCT 201 Fuzzy Box Woodland on alluvial brown loam soils mainly in the NSW South Western Slopes Bioregion
    - 19.6ha of PCT 255 Mugga Ironbark - Buloke - Pillga Box - White Cypress Pine shrubby woodland on sandstone in the Dubbo region, south-western Brigalow Belt South Bioregion
    - 0.1ha of PCT 81 Western Grey Box - cypress pine shrub grass shrub tall woodland.
- Buffered waterways in accordance with their classification and the "Guidelines for Riparian Corridors on Waterfront Land", for 2nd order and above streams, to minimise impacts on hydrology and water quality. Excepting required crossings, these areas will be avoided. Rehabilitation of impacts required in these areas will be with reference to best practice guidelines.
- Avoided existing electricity easements 20m either side of the existing transmission line, approximately 10.2ha.

- The impacts are largely reversible, and offsetting would be undertaken to ensure an overall 'not net biodiversity loss' outcome for the proposal.
- The principles of ecologically sustainable development have been incorporated in the design, construction and ongoing operations of the development.

Consideration has been given to the compatibility of the proposal with the existing electricity network and the compatibility of the site for the generation of solar energy. This ensures construction and operating costs are reduced, maximising the viability of the proposal and its contribution to meeting energy needs into the future. Considerations during initial site investigations included:

- Proximity to and capacity of the electrical transmission network
- Availability of an abundant solar resource
- Availability of suitable land (i.e. topography, aspect, presence of native vegetation)
- Suitability in terms of the interests of other stakeholders and the environment.

The consequences of not proceeding with the proposed Forest Glen Solar Farm would result in:

- Loss of opportunity to reduce GHG emissions and move towards cleaner renewable electricity generation
- Loss of a renewable energy supply that would assist in reaching the NSW renewable energy targets
- Loss of additional electricity generation and supply into the National grid
- Loss of social and economic benefits created through the provision of direct and indirect employment opportunities during the construction and operation of the solar farm.

The Forest Glen Solar Farm would result in numerous benefits, local and regional, and has been developed to ensure the benefits are spread into the longer term, reflecting community expectations specific to this proposal. It provides a balance between technological, energy and environmental aspects, while retaining the flexibility required in the final design stage of the proposal. Furthermore, the proposal is consistent with the principles of ESD and forms an important part of Australia's transition to renewable energy generation. It is considered justifiable and acceptable.

8. References

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Appendix A Updated mitigation measure table

The mitigation measures contained in this report comprise proposal-specific safeguards, recommendations from specialist assessment reports and reference to a range of best practice guidelines and regulatory requirements. The measures are to be incorporated in proposal plans and designs, contract specifications and the Construction Environmental Management Plan, Operation Environmental Management Plan and Decommissioning Environmental Management Plan as appropriate. The mitigation measures are consolidated below. Where measures are relevant to more than one environmental aspect, they are cited only once under the most relevant aspect, to avoid duplication.

ID	Safeguards and mitigation measures	C	O	D
Visual amenity and landscape character				
V1	The materials and colour of onsite infrastructure would, where practical, be non-reflective and in keeping with the materials and colouring of existing infrastructure or of a colour that will blend with the landscape. Where practical: • Proposed new buildings will be non-reflective and in eucalypt green, beige or muted brown. • Pole mounts will be non-reflective. • Security fencing posts and wire would be non-reflective.	Design		
V2	Ongoing consultation to be undertaken with R4 and the Dubbo Model Aero Club	C	O	D
V3	Existing vegetation should be retained and protected, where possible, during the works to maintain the existing level of screening.	C		
V4	Night lighting would be minimised to the maximum extent possible (i.e. manually operated safety lighting at main component locations).		O	
V5	***No above ground operational infrastructure would be constructed within the visual set-back area for R6 as mapped in*** Figure 3-1***. This set back is included manage the operational visual, glare and glint impacts of the project on this receiver.***	C	O	

ID	Safeguards and mitigation measures	C	O	D
V6	**No security lighting to be installed on this perimeter of the project, within 500m of the residence (R6).**	**Design**		
Noise and vibration				
NV1	A Noise Management Plan would be developed as part of the CEMP. The plan would include, but not be limited to: • Use less noisy plant and equipment where feasible and reasonable. • Plant and equipment to be properly maintained. • Provide special attention to the use and maintenance of 'noise control' or 'silencing' kits fitted to machines to ensure they perform as intended. • Strategically position plant on site to reduce the emission of noise to the surrounding neighbourhood and to site personnel. • Avoid any unnecessary noise when carrying out manual operations and when operating plant. • Any equipment not in use for extended periods during construction work should be switched off. • Complaints procedure deal with noise complaints that may arise from construction activities. Each complaint would need to be investigated and appropriate noise amelioration measures put in place to mitigate future occurrences, where the noise in question is in excess of allowable limits. • Establish good relations with people living in the vicinity of the site at the beginning of proposal and maintain. Keep people informed, deal with complaints seriously and expeditiously. The community liaison member of staff should be adequately experienced.	C		
Compatibility with existing land uses				
LU1	Undertake a baseline soil survey prior to construction to inform construction and operational management measures to resist erosion and weed ingress.	PC		
LU2	Consultation would be undertaken with Essential Energy regarding connection to the substation and design of electricity transmission infrastructure.	C	O	D

ID	Safeguards and mitigation measures	C	O	D
LU3	Consultation with proposal site exploration licence holders regarding the proposal and potential impacts.	C	O	D
LU4	**Consultation with DPIE-Crown Lands would be ongoing, and the following would be undertaken:** **Prior to construction, a permit will be applied for to allow construction to commence within Delroy Road Crown road.**	**PC**		
LU5	A pest and weed management plan would be prepared to manage the occurrence of priority weeds and pest species across the site during construction and operation. The plans must be prepared in accordance with Dubbo Regional Council and NSW DPI requirements.	C	O	
LU6	A Rehabilitation Plan would be prepared to ensure the array site is returned to at least or better than pre-solar farmland and soil capability during the decommissioning stage. The plan would be developed with reference to the base line soil testing (completed prior to construction) and with input from an agronomist to ensure the site is left stabilised, under a cover crop or other suitable ground cover. The soil survey would be based on: • *Australian Soil and Land Survey Handbook* (CSIRO, 2009) • *Guidelines for Surveying Soil and Land Resources* (CSIRO, 2008). *The land and soil capability assessment scheme: second approximation (OEH, 2012).*	C		D
Social and economic impacts				
SE1	• Liaison with local industry representatives to maximise the use of local contractors, manufacturing facilities, materials.	C		
SE2	Liaison with local representatives regarding accommodation options for staff, to minimise adverse impacts on local services.	C		D
SE3	• Liaison with local tourism industry representatives to manage potential timing conflicts with local events.	C		D

ID	Safeguards and mitigation measures	C	O	D
SE4	The Community Consultation Plan would be implemented to manage impacts to community stakeholders, including but not limited to: • Protocols to keep the community updated about the progress of the proposal and proposal benefits. • Protocols to inform relevant stakeholders of potential impacts (haulage, noise, air quality etc.). • Protocols to respond to any complaints received.	C		D
SE5	• The Proponent will consult with local employment agencies and training organisations and where practicable, will consider supporting training and apprenticeships.	C	O	D
Biodiversity (Flora and fauna)				
B1	Timing works to avoid critical life cycle events such as breeding or nursing: • Hollow bearing tree removal should be timed to avoid August-November - breeding season for the highest number of species.	C		
B2	Instigating clearing protocols including pre-clearing surveys, daily surveys and staged clearing, the presence of a trained ecological or licensed trained spotter catcher during clearing events: • *Staged clearing, supervised by Ecologist or trained spotter catcher to allow for resident fauna to relocate or be relocated where required*	C		
B3	Relocation of habitat features (fallen timber, hollow logs and embedded rock) from within the Development Site: • All embedded rock, fallen timber and hollow logs should be relocated outside of the construction area under the supervision of an Ecologist or spotter catcher.	C		
B4	Induct all staff prior to construction to identify vegetation to be retained, prevent inadvertent damage and reduce soil disturbance: Approved clearing limits to be clearly delineated with temporary fencing or similar prior to construction commencing. No stockpiling or storage within dripline of any mature trees.	PC C		

ID	Safeguards and mitigation measures	C	O	D
	No stockpiling or storage within riparian buffers.			
B5	Clearing protocols that identify vegetation to be retained, prevent inadvertent damage and reduce soil disturbance; for example, removal of native vegetation by chainsaw, rather than heavy machinery, is preferable in situations where partial clearing is proposed: Documented clearance protocols to mark and protect vegetation to be retained. Use handheld machinery where possible and have elevated work platform check hollows prior to tree felling	PC		
B6	Install temporary fencing to protect significant environmental features such as riparian zones: • Prior to construction commencing, exclusion fences and signage would be installed around identified exclusion zones.	C		
B7	Hygiene protocols to prevent the spread of weeds or pathogens between infected areas and uninfected areas: • Ensure machinery and equipment as clean and free from pathogens and weeds prior to entering site.	C		
B8	Preparation of a Biodiversity Management Plan (BMP) for the site to include: • How to remove and dispose of vegetation and topsoil containing weeds declared under the Biosecurity Act 2015 during and after construction. • Reporting any occurrences of pathogens such as Myrtle Rust and Phytophthora • Identification and protection of biodiversity exclusion zones during construction and operation.	C	O	
B9	Sediment barriers and spill management procedures to control the quality of water runoff released from the site into the receiving environment: • An erosion and sediment control plan would be prepared and implemented. • Spill management procedures would be implemented. • Stormwater management plan prepared and implemented.	C		

ID	Safeguards and mitigation measures	C	O	D
B10	**A preclearance survey would be conducted for *Indigofera efoliata* between September-October, in all areas of Zone 1 PCT 255, prior to project commencement. If this species is detected, all individuals (including an appropriate buffer) would be avoided, in consultation with BCS.**	C		
Traffic, transport and safety				

T1	A Construction Traffic Management Plan (CTMP) will be prepared prior to construction commencing by the appointed contractor. The CTMP will provide additional information regarding the traffic volumes and distribution of construction vehicles that is not available at this time, including:
	• Road transport volumes, distribution and vehicle types broken down into:
	  ○ Hours and days of construction.
	  ○ Schedule for phasing/staging of the project.
	• The origin, destination and routes for:
	  ○ Employee and contractor light traffic.
	  ○ Heavy vehicle traffic.
	  ○ Oversize and over mass traffic.
	The following provides recommended measures that should be adopted within the CTMP to minimise the impact of construction traffic along the road network:
	• Neighbours of the solar farm be consulted and notified regarding the timing of major deliveries which may require additional traffic control and disrupt access.
	• Dwellings are located adjacent to Delroy Road along the access route. It is recommended that dust suppression measures be implemented within the vicinity of the dwelling to limit the impact to residents
	• Loading and unloading is proposed to occur within the work area. No street or roads will be used for material storage at any time.
	• Delivery of larger plant to occur outside of school bus service times and peak traffic times to prevent larger vehicles interacting with the school bus and congestion issues.
		PC		

ID	Safeguards and mitigation measures	C	O	D

	• All vehicles will enter and exit the site in a forward direction.
	• Management of vehicular access to and from the site is essential in order to maintain the safety of the general public as well as the labour force. The following code is to be implemented as a measure to maintain safety within the site:
	  ○ Utilisation of only the designated transport routes.
	  ○ Construction vehicle movements are to abide by finalised schedules as agreed by the relevant authorities.
	• All permits for working within the road reserve must be received from the relevant authority prior to works commencing.
	• A map of the primary haulage routes highlighting critical locations.
	• An induction process for vehicle operators and regular toolbox meetings.
	• A complaint resolution and disciplinary procedure.
	Local climatic conditions that may impact road safety of employees throughout all project phases (e.g. fog, wet and significant dry, dusty weather).
	Dubbo Regional Council will be consultation in the preparation of the Construction Traffic Management Plan.			

T2	The intersection of Minore Road and Delroy Road is to be upgraded to formalise the intersection to ensure vehicle movements are undertaken in a safe manner and to accommodate the increase in traffic generated by the solar farm. The proposed upgrades are shown within Appendix C of the EIS and includes: • Provide a minimum carriageway width of 6.5 metres for Delroy Road; • Seal the first part of Delroy Road to allow vehicles to safely exit Minore Road; • Providing Give Way signage and line marking for vehicles exiting Delroy Road.	PC, C		
T3	A Haulage Plan would be developed and implemented during construction and decommissioning, including but not limited to: • Direction of traffic flow (both heavy and light). • Loads, weights and length of haulage and construction related vehicles and the number of movements of such vehicles. • Scheduling of deliveries of major components to minimise safety risks (on other local traffic). • Traffic controls (signage and site speed limit restrictions etc.).	C	O	D

ID	Safeguards and mitigation measures	C	O	D
	• All heavy vehicle movements to/from the access point are to be managed to ensure that only one inbound or outbound vehicle is travelling along the access route in the vicinity of the site at a time. Heavy vehicle movements into and out of the proposal Site will be controlled via traffic management means, including a traffic controller, temporary lowered speed limit and additional road signage alerting vehicles of truck movements in the area. **Dubbo Regional Council will be consulted in the preparation of the Haulage Plan.**			
T4	The proponent would engage an appropriately qualified person to prepare a Road Dilapidation Report for all road routes to be used during the construction (and decommissioning) activities, in consultation with the relevant road authority. This report is to address all road related infrastructure. Reports must be prepared prior to commencement and after completion of construction (and decommissioning). Any damage resulting from the construction (or decommissioning) traffic, except that resulting from normal wear and tear, must be repaired at the Proponent's cost. Such work shall be undertaken at a time agreed upon between the Proponent and relevant road authorities.	PC		D
T5	The proponent would repair any damage resulting from project traffic (except that resulting from normal wear and tear) as required at the proponent's cost.	C		D
T6	Obtain a Section 138 Consent from the relevant council/agency to carry out works within the road reserve.	C		D
T7	**Prior to transporting any oversized or over mass loads, the applicant shall obtain a permit for an oversized and over mass load from the RMS Special Permits Unit in Glen Innes.**	C		D
Soils				
S1	As part of the CEMP, a Soil and Water Management Plan (SWMP) (with erosion and sediment control plans) would be prepared, implemented and monitored during the proposal, in accordance with Landcom (2004), to minimise soil (and water) impacts. These plans would include provisions to: • Install, monitor and maintain erosion controls.	C		

ID	Safeguards and mitigation measures	C	O	D
	• Ensure that machinery leaves the site in a clean condition to avoid tracking of sediment onto public roads which may cause risks to other road users through reduced road stability. • Manage topsoil in all excavation activities, separate subsoils and topsoils and ensure that they are replaced in their natural configuration to assist revegetation. Stockpile topsoil appropriately so as to minimise weed infestation, maintain soil organic matter, maintain soil structure and microbial activity. • Minimise the area of disturbance from excavation and compaction; rationalise vehicle movements and restrict the location of activities that compact and erode the soils as much as practical. Any compaction caused during construction would be treated such that revegetation would not be impaired. • Manage works in consideration of heavy rainfall events; if a heavy rainfall event is predicted, the site should be stabilised, and work ceased until the wet period had passed. Areas of soil disturbed by the proposal would be rehabilitated progressively or immediately post-construction, reducing views of bare soil.			
S2	A Groundcover Management Plan would be developed in consultation with an agronomist and to ensure final land use includes perennial grass cover establishment across the site as soon as practicable after construction and maintained throughout the operation phase. The plan would cover: • Soil handling, restoration and preparation requirements. • Plant Species election. • Soil preparation. • Establishment techniques. • Maintenance and monitoring requirements. • Perennial groundcover targets, indicators, condition monitoring, reporting and evaluation arrangements – i.e. A target of 70% live grass cover would apply to protect soils, landscape function and water quality. Additional measures would be implemented where practical when live grass cover falls below 70%. Grass cover would be monitored on a fortnightly basis using an accepted methodology. • Contingency measures to respond to declining soil or groundcover condition. I.e. any grazing stock would be removed from the site when cover falls below the target of 70% live ground cover.	C	O	D

ID	Safeguards and mitigation measures	C	O	D
	• Identification of baseline conditions for rehabilitation following decommissioning. • Preserve the native composition as much as possible • **Provide a framework for periodic monitoring of soil health beneath the panels, to include in annual reporting for the project.**			
S3	The array would be designed to allow sufficient space between panels to establish and promote groundcover beneath the panels and allow for implementation of weed controls.	Design		
S4	A Spill and Contamination Response Plan would be developed as part of the overall Emergency Response Plan to prevent contaminants affecting adjacent surrounding environments. The plan would include measures to: • Respond to the discovery of existing contaminants at the site (e.g. pesticide containers or asbestos), including stop work protocols and remediation and disposal requirements. • Requirement to notify the EPA for incidents that cause material harm to the environment (refer s147-153 of the POEO Act). • Manage the storage of any potential contaminants onsite. • Mitigate the effects of soil contamination by fuels or other chemicals (including emergency response and the EPA notification procedures and remediation. • Ensure that machinery arrives on site in a clean, washed condition, free of fluid leaks. • Prevent contaminants affecting adjacent pastures, dams, water courses and native vegetation. • Monitor and maintain spill equipment. Induct and train all site staff.	C	O	D
S5	The transformers will be filled with oil, and waterproof bunds built around them to manage oil spills.	Design		
S6	A protocol would be developed in relation to discovering buried contaminants within the proposal site (e.g. pesticide containers). It would include stop work, remediation and disposal requirements.	C	O	D

ID	Safeguards and mitigation measures	C	O	D
Watercourses and hydrology				
W1	The design of buildings, equipment foundations and footings for electrical componentry and panel mounts would be designed to avoid the 1% AEP flood level to minimise impacts from potential flooding including: • The solar array mounting piers would be designed to withstand the forces of floodwater (including any potential debris loading) up to the 1% AEP flood event plus 500mm freeboard, giving regard to the depth and velocity of floodwaters. • The tracking axis for solar tracking modules would be located above 1% AEP flood event plus 500mm freeboard. • The mounting height of the solar module frames would be designed such that the lower edge of the module is clear of the predicted 1% AEP flood level. • All electrical infrastructure, including inverters, would be located above the 1% AEP flood level plus 500mm freeboard. Where electrical cabling is required to be constructed below the 1% AEP flood level it would be capable of continuous submergence in water. • The proposed perimeter security fencing would be constructed in a manner which does not adversely affect the flow of floodwater and should be designed to withstand the forces of floodwater, or collapse in a controlled manner to prevent impediment to floodwater. • Fencing across the primary watercourse traversing the proposal site would be avoided (two separate fenced compounds on either side of the watercourse would be undertaken where required). • The finished floor level of all buildings should be a minimum of 500mm above the 1% AEP flood level. • Waterway exclusion zones would be marked as no go zones and included in the CEMP.	Design		
W2	All buildings and structures (including solar arrays) associated with the proposal should be located outside high hazard areas (H5 and above) where they may be vulnerable to structural damage and have significant impact on flood behaviour.	Design		
W3	As the proposal site is flood affected it is recommended that: Flood warning signs and flood level indicators should be placed on each approach to any proposed watercourse crossings that is subject to inundation.	C	O	D

ID	Safeguards and mitigation measures	C	O	D
	A Business Floodsafe Plan be prepared for the development to ensure the safety of employees during flood events in general accordance with the NSW SES "Business Floodsafe Toolkit and Plan".			
W4	Any road crossings on watercourses within the proposal site would be of the type defined in Table 2 of the Hydrological and Hydraulic Analysis Report was prepared by Footprint NSW Pty Ltd in Appendix F of the EIS. Any proposed crossings (vehicular or service) of existing watercourses on the subject site should be designed in accordance with the following guidelines, and in the case of vehicle crossing should preferably consist of bed level crossings constructed flush with the bed of the watercourse on first and second order watercourses to minimise any hydraulic impact: • Guidelines for Watercourse Crossings on Waterfront Land (DPI, 2012)Guidelines for Laying pipes and Cables in Watercourses on Waterfront Land (Office of Water, 2010) • *Why do* fish *need to cross the road? Fish Passage Requirements for Waterway Crossings* (Fairfull and Witheridge, 2003). • *Policy and* Guidelines *for Fish Friendly Waterway Crossings* (NSW DPI, 2003).	Design		
W5	Within the floodplain access roads should be constructed as close to natural ground levels as possible so as not to form an obstruction to floodwaters. The surface treatment of roads should be designed giving regard to the velocity of floodwaters to minimise potential for scouring during flood events.	C		
W6	An Emergency Response Plan incorporating a Flood Response Plan would be prepared in consultation with RFS and SES prior to construction covering all phases of the proposal. The plan would: • Detail who would be responsible for monitoring the flood threat and how this is to be done. • Detail specific response measures to ensure site safety and environmental protection. • Outline a process for removing any necessary equipment and materials offsite and out of flood risk areas (i.e. rotate array modules to provide maximum clearance of the predicted flood level). • Consider site access in the event that some tracks become flooded. • Consider appropriate vehicles used to transport staff to and from site, with 4WDs being the preferred vehicle.	C	O	D

ID	Safeguards and mitigation measures	C	O	D
	• Establish an evacuation point. • Define communication protocols with emergency services agencies. • The condition of the private track exiting to Lagoon Creek Road will be monitored in collaboration with the landowner throughout the life of the solar farm and be available to the project needs in the case of emergency.			
Water use and water quality				
WQ1	All fuels, chemicals, and liquids would be stored at least 40m from any waterways or drainage lines, not on sloping land and would be stored in an impervious bunded area.	C	O	D
WQ2	The refuelling of plant and maintenance would be undertaken in impervious bunded areas on hardstand areas only.	C	O	D
WQ3	Machinery would be checked daily to ensure there is no oil, fuel or other liquids leaking from the machinery. All staff would be appropriately trained through toolbox talks for the minimisation and management of accidental spills.	C	O	D
WQ4	All potential pollutants stored on-site would be stored in accordance with HAZMAT requirements and bunded.	C	O	D
WQ5	An incident management procedure to address any spills and pollution incidents will be developed and implemented. The procedure would be incorporated into the Construction and Operation Environmental Management Plans and include a requirement to notify EPA for incidents that cause material harm to the environment (refer s147-153 Protection of the Environment Operations Act).	C	O	D
WQ6	Ensure appropriate drainage controls are incorporated into the design to minimise the area of disturbance, runoff and pollutant generation.	Design		
WQ7	If groundwater is to be intercepted at any stage of the development the proponent must obtain the relevant entitlement and approval where required prior to any extraction.	C	O	D

ID	Safeguards and mitigation measures	C	O	D
WQ8	Re-use of collected stormwater (from dams or sediment basins) should be considered wherever possible.		O	
WQ9	Inspect stormwater control measures before and after rainfall of more than 10mm in 24 hours and at least quarterly.	C	O	D
WQ10	Water supply agreements would be secured in consultation with Dubbo Regional Council and/or local water suppliers prior to construction to ensure adequate water supply is secured for construction and operation.	C	O	
Bush fire				
BF1	Dangerous or hazardous materials would be stored and handled in accordance with AS1940-2004: *The storage and handling of flammable and combustible liquids*.	C	O	D
BF2	Develop a BFEMOP to include but not be limited to: • detailed measures to prevent or mitigate fires igniting; • work that should not be carried out during total fire bans; • availability of fire-suppression equipment, access and water; • storage and maintenance of fuels and other flammable materials; • notification of the local NSW RFS Fire Control Centre for any works that have the potential to ignite surrounding vegetation, proposed to be carried out during a bush-fire fire danger period to ensure weather conditions are appropriate; • and appropriate bush fire emergency management planning. In developing the BFEMOP, NSW RFS and FRNSW would be consulted on the volume of water supplies, fire-fighting equipment maintained on-site, fire truck connectivity requirements, proposed APZ and access arrangements, communications, vegetation fuel levels and hazard reduction measures.	C	O	D

ID	Safeguards and mitigation measures	C	O	D
BF3	An APZ of minimum 10m would be maintained between remnant or planted woody vegetation and solar farm infrastructure. The APZ around the perimeter of the site would incorporate a 4m wide gravel access track. Average grass height within the APZ would be maintained at or below 5 centimetres on average throughout the August - March fire season. Average grass height outside the APZ, including beneath the solar array, would be maintained at or below 10 centimetres throughout the fire season.	C	O	
BF4	The overhead powerlines at the site would be managed by maintaining appropriate vegetation clearance limits to minimise potential ignition risks, in accordance with the *ISSC 3 Guideline for Managing Vegetation Near Power Lines*.		O	
BF5	A non-combustible (steel or concrete) water storage tank should be installed adjoining the main internal access road, or nearby the BS, for fire-fighting and other non-potable water uses, with a 65mm Storz outlet, a metal valve and a minimum of 20,000 litres reserved for fire-fighting purposes, in accordance with PBP.	C		
BF6	Appropriate fire-fighting equipment would be held on site to respond to any fires that may occur at the site during construction. This equipment would include fire extinguishers, a 1000 litre water cart (fitted with suitable hosing, fittings and diesel firefighting pump) retained on site on a precautionary basis, particularly during any blasting and welding operations. Equipment lists would be detailed in Work Method Statements.	C		
BF7	The NSW RFS and Fire and Rescue NSW would be provided with a contact point for the solar farm, during construction and operation.	C	O	
BF8	Following commissioning of the solar farm, the local NSW RFS and Fire and Rescue brigades would be invited to an information and orientation day covering access, infrastructure, firefighting resources on-site, fire control strategies and risks/hazards at the site		O	
BF9	The perimeter access track would comply with the requirements of property access roads in accordance with Table 5.3b of the PBP. All access and egress tracks on the site would be maintained and kept free of parked vehicles to enable rapid response for firefighting crews and to avoid entrapment of staff in the case of bush fire emergencies. Access tracks would be constructed	C	O	D

ID	Safeguards and mitigation measures	C	O	D
	as through roads as far as practicable. Dead end tracks would be signposted and include provision for turning firefighting vehicles.			
BF10	A Hot Works Permit system would be applied to ensure that adequate safety measures are in place. Fire extinguishers would be present during all hot works. Where practicable hot works would be carried out in specific safe areas (such as the Construction Compound temporary workshop areas).	C	O	D
BF11	Machinery capable of causing an ignition would not be used during bushfire danger weather, including Total Fire Ban days.	C	O	D
BF12	Prior to operation of the solar farm, **a comprehensive Emergency Response Plan (ERP) is to be developed for the site** in consultation with the RFS and Fire and Rescue NSW. This plan must include but not be limited to: • Specifically addresses foreseeable on site and off site fire events and other emergency incidents **(e.g. fires involving solar panel arrays, bushfires in the immediate vicinity or potential hazmat incidents).** • **Detail the appropriate risk control measures that would need to be implemented in order to safely mitigate potential risks to the health and safety of firefighters and other first responders (including electrical hazards).** Risk control measures would include the level of personal protective clothing required to be worn, the minimum level of respiratory protection required, decontamination procedures, minimum evacuation zone distances and a safe method of shutting down and isolating the PV system (either in its entirety or partially, as determined by risk assessment). • Outline **other** risk control measures that may need to be implemented in a fire emergency due to any unique hazards specific to the site. • Two copi**es of the ERP are stored in a prominent 'Emergency Information Cabinet' which is located in a position directly adjacent to the site's main entry point/s.** • **Once con**structed and prior to operation, the operator of the facility would contact the relevant local emergency management committee (LEMC).	PC,C	O	
BF13	Fire risks associated with the lithium-ion energy storage facility would include: • Locating the Energy Storage Facility as far as practicable from any sensitive receptors or large stands of vegetation. • Installing reliable automated monitoring (voltage and temperature), alarm and shutdown response systems.		Design	

ID	Safeguards and mitigation measures	C	O	D
	• Installing reliable integrated fire detection and fire suppression systems (inert gas). • Ensuring the battery containers are not vulnerable to external heat effects in the event of a bushfire. • Designing appropriate separation and isolation between battery containers and between batteries and other infrastructure, including gravel surfacing around the facility for a minimum 10m in accordance with APZ. • Compliance with all relevant guidelines and standards. • Preparation of a specific Battery Fire Response Plan, under the general BFEMOP, in consultation with fire authorities, fire suppression experts and in reference to relevant standards and guidelines. Facilitation of first responder training in the management of Lithium-ion battery fires at the site for local brigades.			
B14	**Prior to operation, a Fire Safety Study (FSS) will be undertaken to ensure that the fire prevention, detection, protection and firefighting measures are appropriate to the specific fire hazards and adequate to meet the extent of potential fires from the BESS. The FSS will considers the operational capability of local fire agencies and the need for the facility to achieve an adequate level of on-site fire and life safety independence The FSS will be developed in accordance with the requirements of Hazardous Industry Planning Advisory Paper No.2 (HIPAP No.2) and consultation with FRNSW.**		O	
Aboriginal Heritage				
AH1	Further archaeological assessment would be required if the proposal activity extends beyond the area assessed in this report. This would include consultation with the registered Aboriginal parties and may involve further field survey.	C	O	D
AH2	No ground disturbing activities or removal of remnant vegetation is to occur outside the survey area as outlined in Figure 8-26 of the EIS.	C	O	D
AH3	During construction and ongoing use of the Forest Glen Solar Farm, the unexpected finds procedure outlined in Appendix B of the ACHA report must be followed.	C	O	D

ID	Safeguards and mitigation measures	C	O	D
AH4	In the unlikely event that human remains are discovered during the construction of the Forest Glen Solar Farm, **all works must cease**, and the **NSW Police must** be notified immediately. Notification of Heritage NSW must occur once the NSW Police have been informed.	C	O	D
Historic Heritage				
HH1	Should an item of historic heritage be identified, Heritage NSW (NSW Department of Premier and Cabinet) must be contacted prior to further work being carried out in the vicinity.	C	O	D
Resource use and waste generation				
WR1	A Waste Management Plan (WMP) would be developed **in consultation with Dubbo Regional Council** to minimise wastes. It would include but not be limited to: • Identification of opportunities to avoid, reuse and recycle, in accordance with the waste hierarchy. • Quantification and classification of all waste streams. • Provision for recycling management onsite. • Provision of toilet facilities for onsite workers and identify that sullage would be disposed of (i.e., pump out to local sewage treatment plant). • Tracking of all waste leaving the site. • Disposal of waste at facilities permitted to accept the waste. Requirements for hauling waste (such as covered loads).	C	O	D
WR2	Septic system is installed and operated according to the Dubbo Regional Council regulations.	C	O	
Electric and Magnetic Fields (EMFs)				

ID	Safeguards and mitigation measures	C	O	D
E1	All electrical equipment would be designed in accordance with relevant codes and industry best practice standards in Australia.	Design		
E2	All design and engineering would be undertaken by qualified and competent person/s with the support of specialists as required.	Design		
E3	Design of electrical infrastructure would minimise EMFs.	Design		
Hazardous materials and development				
H1	Dangerous or hazardous materials would be stored and handled in accordance with AS1940-2004: *The storage and handling of flammable and combustible liquids* and the ADG code where relevant.	C	O	D
H2	Protocols would be developed for lithium-ion battery storage, maintenance, and incident response to mitigate Li-ion fire risks.	C	O	D
H3	The transportation of new and waste lithium-ion batteries would comply with the requirements of the Dangerous Goods Code, including specific 'special provisions' and 'packing instructions' applying to the transportation of Li-ion batteries.	C	O	D
H4	**Prior to operation, a Fire Safety Study (FSS) will be undertaken to ensure that the fire prevention, detection, protection and firefighting measures are appropriate to the specific fire hazards and adequate to meet the extent of potential fires from the BESS. The FSS will considers the operational capability of local fire agencies and the need for the facility to achieve an adequate level of on-site fire and life safety independence The FSS will be developed in accordance with the requirements of Hazardous Industry Planning Advisory Paper No.2 (HIPAP No.2) and consultation with FRNSW.**		**O**	
Air quality and climate				
A1	Track width of internal tracks would be minimised during detailed design.	Design		

ID	Safeguards and mitigation measures	C	O	D
A2	The Community Consultation Plan will be implemented to promote information sharing for air quality and include a complaints process: • Notification of relevant stakeholders defined. An accessible complaints process with a timely response protocol.	C	O	D
A3	Dust control measures, including on site access roads and ground cover management will be specified in the CEMP and Decommissioning Environmental Management Plan (DEMP) and may include water applications or other means as required.	C	O	D
A4	Dust generation by vehicles accessing the site and earthworks at the site would be suppressed using water applications or other means as required.	C		D
A5	Vehicle loads of material which may create dust would be covered while using the public road system.	C		D
A6	All vehicles and machinery used at the site would be in good condition, fitted with appropriate emission controls and comply with the requirements of the POEO Act, relevant Australian standards and manufacturer's operating recommendations. Plant would be operated efficiently and turned off when not in use.	C	O	D
A7	Fires and material burning is prohibited on the proposal site.	C	O	D
Cumulative impacts				
C1	The proponent would liaise with representatives of Maryvale, Dunedoo, Wollar, Mumbill, Suntop and Gilgandra, Burrendong and Uungula wind/ solar farm developments to manage impacts on local services, accommodation and businesses.	C		
C2	Accommodation and Employment Strategy for the development in consultation with Council. This strategy must: • Propose measures to ensure there is sufficient accommodation for the workforce associated with the development;	C		

ID	Safeguards and mitigation measures	C	O	D
	• Consider the cumulative impacts associated with other State significant development projects in the area, including nearby mines; • Investigate options for prioritising the employment of local workers for the construction and operation of the development, where feasible; and Include a program to monitor and review the effectiveness of the strategy over the life of the development, including regular monitoring and review during construction.			