



14 November 2018

sent by email correspondence

Ms Tatsiana Bandaruk
Environmental Assessment Officer
Department of Planning & Environment
320 Pitt Street
Sydney, 2000

Dear Tatsiana

Orange Grove Solar Farm (SSD 8882)
Response to submissions (RTS) in relation to Environment Impact Assessment

This Submissions Report responds to submissions made by community, industry and government agencies on the Environmental Impact Assessment (EIS) report submitted to the NSW Department of Planning and Environment (DPE) on 24 May 2018 for the development, construction and operation of a solar PV renewable energy generation facility known as the Orange Grove Sun Farm (OGSF) as proposed for development by Overland Sun Farming Pty Ltd (OVERLAND) on behalf of Orange Grove Sun Farm Pty Ltd (OGSFPL).

Submission

DPE received 86 submissions on the submitted EIS for the OGSF project, including 9 from government agencies, 1 from a special interest organisation and 76 from the general public. The EIS exhibition period commenced on Wednesday 6 June 2018 and concluded on Thursday 5 July 2018.

Having considered the submissions lodged at length, a full review of the proposed project infrastructure layout and development footprint was carried out by OGSF. OGSF has subsequently revised the project site configuration with the objective of further minimising the interaction of the proposed solar farm with the site and surrounding environment and adjacent land uses. This Submissions Report presents the suite of documents (as listed below) which collectively respond to the submissions and report on further studies undertaken to support the revised infrastructure layout and development footprint.

1. Response to Government Agency and Organisations
2. Response to Public Submissions
3. Appendix 1 – EIS addendum (including BDAR addendum)
4. Appendix 2 – GHD hydrology report



5. Appendix 3 – SMEC Glare and Glint Analysis

6. Appendix 4 – Setback & Landscape Cross Section

In responding to the public submissions, we have structured the Response to Public Submissions by grouping responses to common topics that have been in the submissions, and referenced individual submission identifiers against the relevant topic.

OVERLAND is pleased to submit this report to DPE on behalf of OGSFPL and looks forward to progressing the application for consent to develop, construct and operate this significant solar energy generation facility in New South Wales.

Sincerely

Brett Thomas

CEO & Managing Director – Overland Sun Farming Pty Limited
Director – Orange Grove Sun Farm Pty Limited



1 RESPONSE TO GOVERNMENT AGENCY SUBMISSIONS

1.1 NSW GOVERNMENT | DEPARTMENT OF INDUSTRY

Subject	Detail of submission	Orange Grove Sun Farm (OGSF) Response
Water Resources		
	<p>The EIS indicates that using the highest historical flood level monitoring, the modelled level of the nearby Namoi River (272.3 m) would not reach the lowest surveyed level of the development (272.5 m). However the assessment also indicates that a mapped 1st order watercourse may be a breakout channel for the Namoi River that has flowed in the relevant large design flood. Additional flood assessment is recommended to confirm this and hence to determine its relevance under the Draft Floodplain Management Plan for the Upper Namoi Valley Floodplain.</p> <p>Recommendation prior to project approval</p> <p>It is recommended additional flood assessment be completed to determine whether the existing 1st order watercourse located within the development footprint is a breakout channel of the Namoi River for the large design flood in the draft Floodplain Management Plan for the Upper Namoi Valley Floodplain (FMP). If this is the case an assessment against the requirements of the FMP will be required.</p>	<p>OGSF commissioned a review of the 1st order water course located in the north-eastern corner of the original development footprint. This report is provided in Appendix 2.</p> <p>OGSF has revised the layout and development footprint of the project to exclude all proposed project infrastructure, including perimeter fencing, as to remove all potential impacts to the 1st order watercourse.</p> <p>The revised infrastructure layout and development footprint are shown in Figure 1.2 of the EIS addendum attached as Appendix 1.</p>



	<p>The proponent has indicated that there is a small farm dam that will be removed as part of site establishment activities. There has been no assessment of the impact of removing the dam, including dewatering and removal of aquatic habitat. Rehabilitation will be needed to ensure adequate reconstruction and stabilisation of the existing drainage channel.</p> <p>Recommendation prior to project approval</p> <p>It is recommended that the proponent assess the impacts of removing the existing farm dam on the aquatic habitat and existing drainage lines. A commitment is requested to reconstruct and stabilise the drainage lines where the impacts of dam removal are considered acceptable.</p>	<p>The mapped farm dam is an overflow that was associated with a previous windmill and stock water trough at a bore within the development footprint. The landowner has replaced this windmill with a solar pump and water tank at the bore, which has alleviated the need for the overflow. Any water captured is lost to evaporation and seepage.</p> <p>As the overflow is dry, there is no requirement for dewatering nor removal of aquatic habitat and therefore no reconstruction and stabilisation of the drainage lines are required.</p>
	<p>A number of bores have been identified on the property. If removal or modification to these bores is required, consultation will be required to confirm any requirements under the Water Management Act 2000.</p>	<p>OGSF understands the requirements of this condition and will comply with it.</p>
	<p>The proponent has identified that estimated water requirements during construction will be 15 ML for a 9 - 15 month period, for dust suppression and potable water. Annual water requirements during operation will be 3 ML, for cleaning panels and potable water. A range of water sources have been identified including via water tankers, an existing on-site bore with a 10 ML entitlement, or a neighbouring landholder. The department recommends</p>	<p>OGSF confirms that there is sufficient water allocations available for the construction and operations phases of the project and rights are currently being finalised. All water allocations and works approvals will be in accordance with WaterNSW regulations and associated with the project Water Access Licence (WAL42132), which has been secured by OGSF.</p>



	<p>the proponent confirm a secure source of water prior to the approval of the project.</p> <p>Recommendation prior to project approval</p> <p>It is recommended that the proponent confirm that sufficient water entitlement has been secured for the construction and operation phases of the project. Where water is to be sourced from a new extraction point in the water source an impact assessment will be required.</p>	
	<p>The EIS indicates no Groundwater Dependent Ecosystems (GDEs) exist within the site and no impacts on groundwater are expected. No depth of excavation however has been specified hence it is uncertain of the potential to intercept groundwater. The department recommends the excavation depths be confirmed and assess the potential to impact groundwater.</p> <p>Recommendation prior to project approval</p> <p>It is recommended that the proponent specify the depths of excavation for the proposed development and assess the potential for groundwater impacts.</p>	<p>As stated in Section 6.9 of the EIS, no Ground Water Dependent Ecosystems exist within the site and no impacts upon groundwater are expected.</p> <p>Within the OGSF development footprint are two bores (GW901524 and GW902328), which have approximate groundwater levels of 18.0 and 25.0 metres below the surface, respectively.</p> <p>Below are examples of approximate depths of excavations that are typical within a proposed solar farm:</p> <ul style="list-style-type: none"> • Fence Brace: 500 - 1,000mm • Cable Trench: 300 - 1,200mm • Fence Pole: 600 - 1,500mm • PV Tracker Piles: 2,500 - 4,000mm • Substation Footing: 1,000 - 2,000mm



	<p>Whether the mapped 1st order watercourse is a breakout channel from the Namoi River or is limited to conveying local runoff, the ability to ensure this function continues is important. Managing the potential for erosion and sedimentation during construction and operation would also be required.</p> <p>The department supports the safeguards and mitigation measures proposed to be prepared prior to construction through an Erosion and Sediment Control Plan (ESCP) in accordance with Landcom (2004).</p> <p>Recommended condition of approval</p> <p>That the proponent prepares a Soil and Water Management Plan and Erosion and Sediment Control Plan as part of the Construction Environmental Management Plan in consultation with the Natural Resources Access Regulator, prior to commencement of activities.</p>	<p>OGSF understands the requirements of this condition and will comply with it through the inclusion of a Soil and Water Management Plan and an Erosion and Sediment Control Plan which will be part of the projects Construction Environment Management Plan.</p>
<p>Agricultural resources</p>		
	<p>The EIS does not address the potential impacts to the operation from existing routine farming activities which may result in lost energy production, for example from dust deposition on panels as a result of neighbouring farming activity. The proponent should address the Right to Farm policy which supports rural landholders to be able to undertake lawful agricultural practices without conflict or interference arising from complaints from neighbours and other land users, including the proponent. Such</p>	<p>Chapter 6.5.4 of the EIS, Management and Mitigation, outlines the Environmental Management Plan (EMP) which will include a number of land and management measures that will be implemented during the life of the project to reduce the impact of the project on the land and to ensure neighbouring landowners Right to Farm is not infringed upon.</p> <p>OGSF understands the requirements of the condition to remove all above and below ground infrastructure from land identified as BSAL once the site is decommissioned and will comply with it.</p>



	<p>conflict or interference may have the potential to sterilise a larger footprint of highly productive Biophysical Strategic Agricultural Land (BSAL) over and above the project area.</p> <p>Recommended condition of approval</p> <p>That all infrastructure (above and below ground) be removed from land identified as Biophysical Strategic Agricultural Land (BSAL) once the site is decommissioned.</p>	
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1.2 GUNNEDAH SHIRE COUNCIL

Subject	Detail of submission	Orange Grove Sun Farm (OGSF) Response
<p>Traffic Impact Assessment</p>		
<p>It is noted that a Traffic Impact Assessment and Management Plan was submitted as part of the application. However, the documentation contains limited details and should be amended to the satisfaction of the relevant road authorities (RMS and Gunnedah Shire Council). The following information is requested:</p>		
1	<p>Road Maintenance Program inadequately described and does not cover the entire vehicle route, notably for heavy vehicles. A dilapidation assessment and report should be undertaken by suitably qualified and independent civil or structural engineer of the full vehicle route, not just Orange Grove Road.</p> <p>Geotechnical test pits should be considered as part of this assessment to determine existing depth of pavement on Old Blue Vale Road to accurately determine cumulative impacts.</p>	<p>The details of the road maintenance program will be confirmed in consultation with Gunnedah Shire Council (GSC) as part of preparation of the Construction Traffic Management Plan (CTMP) prior to the commencement of construction. As noted in Section 5.3 of the TIA, as a minimum, the proposed road maintenance program will be implemented for the 5.4 km unsealed section of Orange Grove Road and will include:</p> <ul style="list-style-type: none"> • regrading of the road surface to repair potholes and road corrugations (typically at three monthly intervals during construction and less frequently during the operational period); and • a commitment by Orange Grove Sun Farm Pty Ltd to restore the gravel road surface to its pre-existing condition at the completion of the project's construction.



		<p>A dilapidation assessment and report will not be undertaken along the entire vehicle route as this includes significant lengths of both the Oxley Highway and Kamilaroi Highway, both of which are state funded highways.</p> <p>A dilapidation assessment and report by a suitably qualified expert, will be prepared for the proposed heavy vehicle route between the development footprint and the Kamilaroi Highway. This route includes the following local roads:</p> <ul style="list-style-type: none"> • Blue Vale Road; • Old Blue Vale Road; • Kelvin Road; and • Orange Grove Road. <p>The dilapidation assessment and report will be completed prior to the commencement of construction and the report will be provided to GSC for review.</p>
2	The unsealed section of Orange Grove Road will need sealing prior to construction commencing to manage dust. A polymer dust suppressant may be a suitable alternative to bitumen given the short term nature of the construction.	<p>As noted in Section 5.3 of the TIA, a road maintenance program will be implemented for the 5.4 km unsealed section of Orange Grove Road, which will include a road surface treatment or regular water spray treatment to reduce potential dust generation by project-related traffic during the construction period.</p> <p>This road maintenance program will be detailed into the Construction Traffic Management Plan.</p>
3	A Traffic Management Plan should be prepared to the satisfaction of the relevant road authorities (RMS and Gunnedah Shire Council).	As noted in Table 7.1 of the EIS, a construction traffic management plan (CTMP) will be included in the Environmental Management Plan (EMP) for the project and will be prepared prior to commencement of construction.
4	The traffic impact assessment has not been reviewed independently.	The SEARs for the project did not include a requirement for any of the technical assessments or the EIS to be reviewed independently.



5	<p>A new access should be provided at the development site commensurate with the scale on the proposed development. As a minimum the RMS Typical Rural Property Access Standard for articulated vehicles should be provided.</p>	<p>As noted in Section 2.1 of the TIA, two access road locations off Orange Grove Road will be used to access the development footprint, one each for the northern and southern portions of the development footprint, respectively. Both of these access intersections will consist of a three-way intersection with Orange Grove Road.</p> <p>Gravel shoulder widening will be constructed at the two access intersections with Orange Grove Road to facilitate the turning movements by large vehicles to and from Orange Grove Road, which should accommodate the swept path turning requirements for the largest type of construction vehicle approved under the conditions of consent. These will be constructed to relevant standards which include <i>AS2890.1 Typical Rural Property Access Standards</i> and Austroads type BAR/BAL intersection dimensions (presented in Appendix A of the TIA).</p> <p>No sealed intersections are proposed as Orange Grove Road is currently unsealed.</p>
6	<p>Working hours during construction should consider the existing school bus route and times and be adjusted if required.</p>	<p>As noted in Section 2.4 of the TIA, the school bus operates a morning (8:00 am) and afternoon (4:00 pm) school bus service on school days along Orange Grove Road.</p> <p>As noted in Table 7.1 of the EIS, in order to minimise impacts on traffic flow along Orange Grove Road, deliveries and other vehicle movements will avoid peak hour and school bus times, whenever possible.</p> <p>Heavy vehicle movements along Orange Grove Road during school bus route times will be restricted as part of the CTMP. Restrictions will not apply during NSW school holiday periods.</p>
7	<p>The TIA relies on a Code of Conduct to be agreed to by supply contractors however there is little description of enforceable actions in the occurrence that there is a breach of this Code of Conduct. This is notable as Council will have few enforceable powers to deter drivers from not adhering to the proposed HV route if the Code of Conduct is not adhered to.</p>	<p>As noted in Table 7.1 of the EIS, a Driver Code of Conduct will be detailed in the CTMP as part of the EMP for the project and will be prepared prior to commencement of construction.</p> <p>The Driver Code of Conduct will outline appropriate driver behaviour including adherence to all traffic regulations, speed limits, safe overtaking and maintaining appropriate distances between vehicles. The obligation to follow the Driver Code of Conduct will also be included within contractual arrangements between OGSF and its contractors.</p>
8	<p>The complaint handling process and resolution process should be established prior to the issue of the Construction Certificate.</p>	<p>OGSF will have an appropriate complaint handling and resolution procedure as part of the EMP that is to be prepared prior to the commencement of construction.</p>



9	A Road Safety Audit should be prepared by a suitably Qualified Road Safety Auditor and made available to Council.	<p>Section 2.5 of the TIA addresses the traffic safety requirements and GSC's recommendations for the scope of the TIA (refer to Table 1.2 of the TIA).</p> <p>As noted in Section 2.5 of the TIA, traffic safety conditions in the vicinity of Orange Grove Road and Kelvin Road are considered to be acceptable, with good intersection visibility in both directions at all locations along Kelvin Road and Orange Grove Road.</p> <p>Further, the route designs along both the Oxley and Kamilaroi Highways meet the relevant Austroads (2010) road design standard for the current daily traffic volumes and no inherent traffic safety deficiencies have been identified for these routes.</p> <p>Consequently, a road safety audit is not currently required for either of these roads.</p>
10	The access from Orange Grove Road to the proposed development should be sealed.	<p>Orange Grove Road is currently unsealed to approximately 5.4km to the west of the proposed project entrances.</p> <p>Gravel shoulder widening will be constructed at the two access intersections with Orange Grove Road to facilitate the turning movements by large vehicles to and from Orange Grove Road, which should accommodate the swept path turning requirements for the largest type of construction vehicle approved under the conditions of consent. These will be constructed to relevant standards which include <i>AS2890.1 Typical Rural Property Access Standards</i> and Austroads type BAR/BAL intersection dimensions (presented in Appendix A of the TIA).</p>
11	All internal driveways, parking areas, loading bays and vehicular turning areas are to be constructed with a base course of adequate depth to suit design traffic, being hard sealed with either bitumen seal, asphaltic concrete, concrete or interlocking pavers or other alternative product which has been approved by Council. Parking areas must comply with AS 2890 - Parking Facilities and Council's Engineering Guidelines for Subdivisions and Developments, 2013.	<p>During the construction period of the project, parking areas are not required to be constructed in compliance with AS 2890 – Parking Facilities and GSC's Engineering Guidelines for Subdivisions and Developments (2013) due to the temporary nature of vehicle movements. Temporary parking will be managed and controlled by the onsite construction contractors.</p> <p>Permanent on-site parking is required for the operations and maintenance of the project and this parking will be designed to comply with all relevant standards.</p>
12	Variable Message Signage (VMS) should be maintained on Kelvin Road during the construction period to advise motorists	As noted in the TIA, the CTMP will be prepared in consultation with RMS and in accordance with the RMS Traffic Control at Worksites Manual (RTA 2010). The CTMP will include traffic controls (eg speed limits, signage, etc) to



	of the changed traffic conditions. Temporary speed limits should also be considered for the duration of the construction period on the development frontage.	manage the impacts of project-related vehicle movements on the local road network during the project's construction period.
13	<p>Old Blue Vale Road proposed as part of the HV Route has a nominal 5m wide seal. To allow 2-way traffic movements opposing vehicles must drive on the unsealed shoulder. The following mitigation measures should be considered:</p> <ul style="list-style-type: none"> • Upgrading of the pavement width at the eastern end of Old Blue Vale Road to allow for opposing heavy vehicles to pass close to Kelvin Road • A maintenance agreement with Gunnedah Shire Council for the construction period on Old Blue Vale Road. 	As noted in Section 2.1 of the TIA, Old Blue Vale Road has a straight level alignment with excellent visibility. OGSF will include in the CTMP measures to allow for the safe movement of vehicles along Old Blue Vale Road for the construction period of the project.
14	Commensurate light vehicle car parking should be provided for the proposed staff during the peak construction period or alternate arrangements made.	As noted in Section 3.6 of the TIA, a suitable number of parking spaces will be available within the development footprint for the project's construction and operations workforces. Temporary parking will be managed and controlled by the onsite construction contractors as required.
15	Records of Daily monitoring of road conditions should be maintained and made available on request to relevant road authority in accordance with Impacts.	Monitoring requirements during the project's construction period will be outlined in the CTMP to be prepared prior to commencement of construction and in consultation with the relevant agencies.
16	The required intervention level should be established with the Road Authority prior to the issue of a Construction Certificate.	The CTMP will establish appropriate methods of repairs during the construction period of the project.
17	A Road Opening Permit (Section 138) will be required for any works undertaken on Council's Road Network.	As noted in Section 5.2 of the TIA, OGSF will be required to lodge a Section 138 Certificate (Work on Public Lands) to GSC for approval prior to road works for the proposed intersections.



18	A Maintenance Bond/ Defects Liability Period may be a satisfactory compromise to mitigate the recommended requirements.	The CTMP will outline the measures to mitigate and rectify damage that may be caused by construction traffic. A maintenance bond is not required as the road will be returned to pre-existing condition as identified and detailed in the road dilapidation report conducted prior to the commencement of construction.
Flooding		
1	<p>The Flood Impact Assessment notes a flood event in 1998. Clarification is sought as to which flood event the assessment has been based on, as there were a number of flood events in 1998. In addition, the assumptions have been based on approximate flood levels, without any site specific flood modelling. Site specific flood modelling should be provided to confirm these assumptions.</p> <p>It is requested that if any amendment is made to the Flood Impact Assessment, that sufficient time and opportunity to review and comment on the material be provided to Council and the community.</p>	<p>The SMEC <i>Carroll to Boggabri – Flood Study and Compendium of Data</i> (2003) commissioned by the Department of Land and Water Conservation was used to provide the historical flood data, with the data being utilised in the floodplain modelling undertaken by SMEC. All the major 1998 flood events were considered, in particular the 22nd July 1998 peak of 8.84 m as recorded at the Gunnedah flood gauge 419001.</p> <p>Further flood modelling has been undertaken as requested by NSW Department of Industry's - Lands & Water branch and presented in Appendix 2.</p>
Social and Economic Impacts		
The social and economic assessment does not provide adequate detail. Further details is requested in regard to:		
1	Accommodation within Gunnedah and other neighbouring towns is noted. However, there has been no assessment in regard to the availability of this accommodation, particularly during the construction phase. The cumulative impact of the existing and proposed developments should be considered.	The project will create employment opportunities and have direct and indirect benefits to the local and regional economy during the life of the project. The project workforce may utilise short-term accommodation within the Gunnedah Shire local government area (LGA) and surrounds. During construction, an average of 80 FTEs will be required for an approximately nine month period. A review of available short-term accommodation in Gunnedah, Tamworth and Narrabri using online accommodation booking and property websites has been performed (refer Table 1).



Table 1 Available short-term Accommodation within Gunnedah, Tamworth and Narrabri		
Location	Accommodation provider	Capacity
Gunnedah	Gunnedah Motor Inn	21 rooms
	Comfort Inn Harvest Lodge	47 rooms
	Gunnedah Lodge Motel	20 rooms
	Maynestay Motel	5 rooms
	Red Chief Motel	29 rooms
	Gunnedah Hotel	12 rooms
	Mackellar Motel	30 rooms
	Alyn Motel	2 (+ family room)
	The Plains Motor Inn	15 rooms
	Homestay in Gunnedah	2 rooms
Gunnedah Total		214 rooms
Tamworth	Best Western Sanctuary Inn	60 rooms
	Quest Tamworth	40 rooms
	Quality Hotel Powerhouse	81 rooms
	City Sider Motor Inn	38 rooms
	CH Boutique Hotel	62 rooms
	The Tamworth Hotel	14 rooms
	Aaron Cottage	3 rooms
	Almond Inn Motel	27 rooms
	The Duck Inn Apartments	6 rooms
	Kootingal Land view Motel	12 rooms
	Tamworth City Motel	31 rooms
	Motel Grande Tamworth	11 rooms
	Motel 359	55 rooms
	Golden Grain Motor Inn	13 rooms
	Country Capital Motel	31 rooms
	The Roseville Apartments	3 rooms
	Abraham Lincoln Motel	15 rooms
	Ibis Styles Tamworth	108 rooms
	Best Western Motor Inn	29 rooms
	Tamworth Lodge Motel	17 rooms
Sundance Park Motel	25 rooms	
Amberoo Apartments	14 rooms	
Econo Lodge	60 rooms	



		Tamworth Central Motel	5 rooms
		Mercure	52 rooms
		Town & Country Motor Inn	18 rooms
		Best Western Plus All Settlers Motor Inn	20 rooms
		The Stagecoach Motor Inn	24 rooms
		Roydons Motor Inn	12 rooms
		Colonial Inn	33 rooms
		Edward Parry Motel & Apartments	15 rooms
		McNevin's Tamworth Motel	24 rooms
		City Gate Motel	11 rooms
		Tamwell Motel & Coffee Lounges	16 rooms
		Golden Guitar Motor Inn	30 rooms
		Cadman Motor Inn & Apartments	14 motel rooms (+ 6 1 bedroom & 2 bedroom apartments)
		Golf Links Motel	21 rooms
		Motabelle Holiday Units	9 rooms
		Ashby House Motor Inn	21 rooms
		Studio 637	2 rooms
		The Retreat at Froog Moore Park	5 rooms
	Tamworth Total		876 rooms
	Narrabri	MAS Country Club Motor Inn	30 rooms
		Adelong Motel	27 rooms
		Albany Motel	11 rooms
		Crossroads Hotel	8 rooms
		Narrabri Motel & Caravan Park	41 rooms
		Narrabri Big Sky Caravan Park	3 rooms (+powered/unp.sites)
		Kaputar Motel	4 + family room
		Nandewar Motor Inn	44 rooms
		Tommo's Motor Lodge	12 rooms
		Aaron Inn Motel	11 rooms
		Bellview Motel	7 rooms
		Centre of Town B&B	18 rooms
		Riverside Farm Retreat B&B	3 rooms
	<u>Narrabri Total</u>		<u>220 rooms</u>



		<p>As shown in Table 1, there are approximately 214 rooms available in Gunnedah; 876 rooms in Tamworth; and 220 rooms available in Narrabri. Based on the assessment, the total capacity of existing accommodation providers within the Gunnedah Shire LGA and surrounds is estimated to be approximately 1,310 rooms. Based on this estimated available accommodation, and noting the potential for the local workforce to satisfy a portion of the construction workforce needs, it is anticipated that there will be sufficient capacity to support the project workforce in the local short-term accommodation providers identified in Table 1.</p> <p>An accommodation and employment strategy will be prepared and provided to DP&E and Council prior to the commencement of construction.</p>															
2	<p>The impacts on health and other services are not identified. An assessment of the availability of these services or any proposed actions if services are not available should be provided.</p>	<p>The closest hospital is Gunnedah Hospital (approximately 15 km west of the site), which has 43 beds. Gunnedah Hospital has an emergency department as well as other services. There are three other hospitals within an approximate 100 km radius of the site, including:</p> <ul style="list-style-type: none"> • Tamworth Hospital (approximately 80 km from Gunnedah), which has 500 beds and an emergency department; • Narrabri District Health Service (approximately 97 km from Gunnedah), which has 28 beds and a 24 hour emergency department; and • Boggabri Multi Purpose Service Hospital (approximately 42 km from Gunnedah), which has less than 50 beds and an emergency department. <p>There are approximately 40 health care providers offering a variety of services within the Gunnedah Shire LGA and surrounding area. A summary of the providers identified is listed below:</p> <table border="1" data-bbox="981 1193 2054 1345"> <thead> <tr> <th>Location</th> <th>Health service</th> <th>Type of service</th> </tr> </thead> <tbody> <tr> <td>Gunnedah</td> <td>Gunnedah Community Health Services</td> <td>Community Health Service</td> </tr> <tr> <td></td> <td>Gunnedah District Health Services</td> <td>Hospital (&Emergency Department)</td> </tr> <tr> <td></td> <td>Mackellar Rural Health Care</td> <td>Family Practice Physician</td> </tr> <tr> <td></td> <td>The Gatepost Support Services Inc</td> <td>Mental Health Service</td> </tr> </tbody> </table>	Location	Health service	Type of service	Gunnedah	Gunnedah Community Health Services	Community Health Service		Gunnedah District Health Services	Hospital (&Emergency Department)		Mackellar Rural Health Care	Family Practice Physician		The Gatepost Support Services Inc	Mental Health Service
Location	Health service	Type of service															
Gunnedah	Gunnedah Community Health Services	Community Health Service															
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	The Gatepost Support Services Inc	Mental Health Service															



		<p>Health WISE New England North West McLean Care Ltd GoCo Life Matters Uniting Aboriginal Early Links Community Health Services Winanga-Li Aboriginal Mackellar Care Services National Hearing Care Gunnedah Newtrain Reconnect Lundie House</p>	<p>Mental Health Service Home Health Care Services Home Health Services Counselling and Psychotherapy Centre Family Counsellor Emergency Room Child & Family Centre Aged Care Audiologist Family Counsellor Nursing Home</p>
	Tamworth	<p>Community Health Services Peel Health Care Headspace Oxley Health Care Challenge Therapeutic Services Billabong Clubhouse Carer Assist Centacare New England North West Hunter England Local Health Network Tamworth Aboriginal Medical Service i.care Kelly Hanrahan Challenge Community Services Family Psychology Services National Hearing Care McKellar Psychology Insight Services Group Tamworth General Practice Lifestyle Home Services Soulful Beauty & Skincare Anglicare Northern Inland</p>	<p>Community Health Centre Medical Clinic Mental Health Service Medical Clinic Mental Health Service Mental Health Service Mental Health Services Counsellor Medical Centre Community Health Centre Psychologist Disability Services & Support Psychologist Audiologist Psychologist Occupational Rehabilitation Centre GP Home Health Care Services Skincare Clinic Counsellor</p>
	Narrabri	<p>Narrabri District Health Service Namoi Medical Services Health WISE New England North West</p>	<p>Community Health Service Medical Clinic Mental Health Service</p>
	Boggabri	<p>Boggabri Multi Purpose Service Hospital</p>	<p>Hospital</p>



		Boggabri Medical Centre	Medical Centre
3	The EIS does not provide adequate detail regarding the proposed workforce and any potential for training programs, within the local community. The availability of workers has not been considered. It is requested that the skills and employment strategy be developed prior to the commencement of works.	An accommodation and employment strategy is required to be provided to DP&E and Council prior to the commencement of construction.	
State Environmental Planning Policy No. 44 - Koala Habitat Protection (SEPP44)			
	The SEPP 44 assessment only refers to the development footprint. The SEPP44 does not differentiate between development footprint and development site. Consequently, the assessment of koala habitat is to refer to the whole development site. As the EIS identifies the development footprint as potential Koala habitat, further assessment of the development is required to identify if the site is core Koala habitat.	<p>The SEPP 44 assessment within the main report of the Orange Grove Sun Farm Environmental Impact Statement (the EIS) refers to development footprint. The SEPP 44 assessment within Appendix C of the EIS, Orange Grove Sun Farm Biodiversity Development Assessment Report (the BDAR), refers to development site. The terms development footprint and development site refer to the same area (the entire impact area), with the term development site being in line with the method prescribed by the Biodiversity Assessment Methodology (OEH 2017) (BAM).</p> <p>As the SEPP 44 assessment within the BDAR refers to the entire development site, Koala habitat has been assessed across the whole development site and is reproduced below for clarity.</p> <p>One Koala feed tree species, Bimble Box, as defined within Schedule 1 of the SEPP, was identified within the development site. Bimble Box makes up greater than 15 percent of the tree species within the development site. Therefore, the vegetation within the development site is considered potential Koala habitat as defined under SEPP 44.</p> <p>Although Koala scats were recorded on the southern banks of the Namoi River, in the more timbered area south of the development site (Biosis 2017), no scats were found in the development site.</p> <p>The development site is therefore not considered core Koala habitat under the SEPP 44.</p>	
Other Impacts			



In addition to the above, the impacts of the proposed development should also address the following:		
1	Visual impact - it is recommended that all proposed landscaping be undertaken prior to the commencement of construction works.	Please refer Appendix G of the EIS.
2	Waste disposal - it is noted that waste from the development will be taken to licensed waste facility. As requested previously, for the disposal of large volumes of waste at Council's Waste Management Facility, that notification be provided in advance to assist with the disposal.	OGSF commits to notifying Council's Waste Management Facility prior to the disposal of large volumes of waste.
3	As the development will require the subdivision of land, it is requested that the residual land be consolidated into one lot to prevent any further fragmentation of agricultural land.	<p>The requirement for subdivision is to facilitate the project substation which will be owned by TransGrid and form part of the TransGrid electrical transmission infrastructure for the purpose of connection to the national electricity grid.</p> <p>OGSF does not own the land on which the solar farm will be constructed and subsequently has no legal right to agree to any consolidation of titles.</p>
4	Council 's Section 94A Contributions Plan applies to the development site. It is requested that any requirement for the payment of contributions be included on the notice of determination.	<p>OGSF will provide a significant investment into the local Gunnedah community and wider region. During construction, the local workforce will have employment opportunities on the project. There will be requirements for lodgement, food services, transportation and other general goods and services. During operation of the OGSF, up-to 5 fulltime positions will be created which will employ and provide financial security for local families for the life of the solar farm.</p> <p>Outside of the proposed transportation routes, which will be maintained under the CMTP, OGSF will not be utilising public facilities owned by Gunnedah Shire Council. As such, the OGSF will not result in a net increase in burden on council services and infrastructure but provide an economic benefit.</p> <p>As such, OGSF requests that there are no contributions in the determination. OGSF notes that the project land will continue to be subject to Council rates and charges as currently exists.</p>



1.3 NSW GOVERNMENT | DPE – DIVISION OF RESOURCES & GEOSCIENCE, GEOLOGICAL SURVEY OF NSW (GSNSW)

Subject	Detail of submission	OGSF Response
	<p>Thank you for the opportunity to provide advice on the Environmental Impact Statement (EIS) for the Orange Grove Solar Farm (SSD 8882). This is a response from the Department of Planning & Environment – Division of Resources & Geoscience, Geological Survey of New South Wales (GSNSW).</p> <p>The EIS has addressed all GSNSW requirements regarding the assessment of land use compatibility with operating mines, extractive industries (quarries), mineral, coal or petroleum resources and exploration activities. Coal and petroleum titles over the site have been identified and considered, and consultation with titleholders has been adequately undertaken and recorded in the EIS.</p> <p>GSNSW note no biodiversity offsets are required for the project.</p>	<p>OGSF acknowledges and thanks DPE Division of Resources & Geoscience, Geological Survey of New South Wales (GSNSW) for its response.</p>

1.4 NSW GOVERNMENT | FIRE & RESCUE NSW

Subject	Detail of submission	OGSF Response
	<p>That a comprehensive ERP is developed for the site.</p>	<p>OGSF understands the requirements of this condition and will comply with it.</p>
	<p>That the ERP 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).</p>	<p>OGSF understands the requirements of this condition and will comply with it.</p>
	<p>That the ERP 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</p>	<p>OGSF understands the requirements of this condition and will comply with it.</p>



	<p>firefighters and other first responders (including electrical hazards). Such 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 photovoltaic system (either in its entirety or partially, as determined by risk assessment).</p>	
	<p>Other risk control measures that may need to be implemented in a fire emergency due to any unique hazards specific to the site should also be included in the ERP.</p>	<p>OGSF understands the requirements of this condition and will comply with it.</p>
	<p>That two copies of the ERP (detailed in recommendation 1 above) be stored in a prominent 'Emergency Information Cabinet' which is located in a position directly adjacent to the site's main entry point/s.</p>	<p>OGSF understands the requirements of this condition and will comply with it.</p>
	<p>Once constructed and prior to operation, that the operator of the facility contacts the relevant local emergency management committee (LEMC). The LEMC is a committee established by virtue of Section 28 of the State Emergency and Rescue Management Act 1989. LEMCs are required to be established so that emergency services organisations and other government agencies can proactively develop comprehensive inter agency local emergency procedures for significant hazardous sites within their particular local government area. The contact details of members of the LEMC can be obtained from the relevant local council.</p>	<p>OGSF understands the requirements of this condition and will comply with it.</p>



1.5 NSW RURAL FIRE SERVICE

Subject	Detail of submission	OGSF Response
	<p>The subject land is not mapped bush fire prone by Gunnedah Shire Council however it is noted the land and surrounding lands may contain a grassland vegetation formation. Further the NSW RFS is the primary response agency for fighting fires within the site.</p> <p>The NSW RFS has reviewed the Environmental Impact Statement (EIS) and notes that the EIS included commitments to addressing the impacts of bush and structural fires on the facility.</p> <p>As such, the NSW RFS has no objection to the proposal and provides the following recommended conditions to be included to any consent granted.</p>	<p>OGSF acknowledges and thanks NSW Rural Fire Service for its response.</p>
	<p>A Fire Management Plan (FMP) shall be prepared in consultation with NSW RFS Liverpool Plains Fire Control Centre. The FMP shall include: -</p> <ul style="list-style-type: none"> • 24 hour emergency contact details including alternative telephone contact; • Site infrastructure plan; • Fire fighting water supply plan; • Site access and internal road plan; • Construction of Asset Protection Zones (APZ) and their continued maintenance; 	<p>OGSF understands the requirements of this condition and will comply with it.</p>



	<ul style="list-style-type: none"> • Location of hazards (Physical, Chemical and Electrical) that will affect fire fighting operations and procedures to manage identified hazards during fire fighting operations; • Such additional matters as required by the NSW RFS District Office (FMP review and updates). 	
	The entire solar array development footprint to be managed as an Asset Protection Zone as outlined within section 4.1.3 and Appendix 5 of 'Planning for Bush Fire Protection 2006' and the NSW Rural Fire Service's document 'Standards for Asset Protection Zones'.	OGSF understands the requirements of this condition and will comply with it.
	A 20,000 litre water supply (tank) fitted with a 65mm storz fitting shall be located adjoining the internal property access road within the required APZ.	OGSF understands the requirements of this condition and will comply with it.
	To allow for emergency service personnel to undertake property protection activities, a 10 metre defensible space (APZ) that permits a minimum 4 metre wide, unobstructed vehicle access is to be provided around the perimeter of the solar array and associated infrastructure.	OGSF understands the requirements of this condition and will comply with it.

1.6 NSW GOVERNMENT | HERITAGE COUNCIL OF NEW SOUTH WALES

Subject	Detail of submission	OGSF Response
	<p>We have reviewed the following documents.</p> <ul style="list-style-type: none"> • Orange Grove Sun Farm, Environmental Impact Statement (EIS), dated May 2018, prepared by EMM Consulting Pty Limited. • SEARs issued on 20 December 2017. 	OGSF acknowledges and thanks the Heritage Council of New South Wales for its response.



	<p>We note that no historic heritage issues have been identified in the EIS. In view of the above, the EIS provides recommendations for the management of unexpected finds in the statement of commitments. These protocols should be included in the Heritage Management Plan for the project.</p>	
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1.7 NSW GOVERNMENT | TRANSPORT ROADS & MARITIME SERVICES

Subject	Detail of submission	OGSF Response
	<p>A Traffic Management Plan (TMP) should be prepared for the construction, operation and decommission stages of the development, to the satisfaction of Roads and Maritime and Gunnedah Shire Council.</p> <p>The TMP may include Traffic Control Plans (TCPs) which must be designed and approved by qualified person/s in accordance with the RTA Traffic Control at Work Sites Manual. Implementation of TCPs on classified (State) roads would require a Road Occupancy Licence from Roads and Maritime.</p> <ul style="list-style-type: none"> • It is recommended that any TMP include, but not be limited to, the following – Consideration of cumulative impacts - the TMP should consider the co-ordination of heavy vehicle movements from Orange Grove Solar Farm, Gunnedah Solar Farm, and any other local developments that have a significant traffic impact on the Kamilaroi Highway / Blue Vale Road intersection. • Should the upgrading and sealing of Blue Vale Road not occur prior to the construction of Orange Grove Solar Farm then it is recommended that the TMP identify measures to ensure the safety of the road is maintained to the satisfaction of Council. 	<p>OGSF understands the requirements of this condition and will comply with it prior to the commencement of construction.</p>



	<ul style="list-style-type: none"> • The TMP should include a Driver's Code of Conduct which may include, but not be limited to, the following; <ul style="list-style-type: none"> ○ A map of the primary access routes highlighting critical locations. ○ Safety initiatives for transport through residential areas, school zones and along school bus routes. ○ Consideration for coordination of construction traffic with seasonal agricultural haulage. ○ An induction process for vehicle operators and regular toolbox meetings. ○ A complaint resolution and disciplinary procedure. ○ Any community consultation measures for the peak construction period. 	
	<p>Should over mass, over dimension (OMOD) vehicles be required at any stage of the development then a Permit from Roads and Maritime would be required.</p>	<p>OGSF understands the requirements of this condition and will comply with it.</p>
	<p>Access to the development is proposed from the local road network. The access should be designed and constructed in accordance with Austroads Guidelines and Australian Standards, to the satisfaction of Gunnedah Shire Council. It is recommended that swept path analysis be undertaken to ensure the largest design vehicle can safely enter and exit the site in a forward manner.</p>	<p>OGSF understands the requirements of this condition and will comply with it.</p>
	<p>It is the land owner's responsibility to maintain any access driveways to the development to improve safety and efficiency of access and to minimise the generation of dust and/or tracking of material onto the public road.</p>	<p>OGSF understands the requirements of this condition and will comply with it.</p>



1.8 NSW ENVIRONMENT PROTECTION AUTHORITY

Subject	Detail of submission	OGSF Response
	The EPA has briefly reviewed the proposal as presented in the document titled, 'Orange Grove Solar Farm - Environmental Impact Statement' dated 15 May 2018 and advises that the proposal will not need an Environment Protection Licence if consent is granted. Accordingly, the EPA will not be providing any recommended conditions of approval for this project.	OGSF acknowledges and thanks the NSW Environment Protection Authority for its response.

1.9 NSW GOVERNMENT | OFFICE OF ENVIRONMENT & HERITAGE

Subject	Detail of submission	OGSF Response
<p>1. Discrepancies exist between the patch size stated in the Biodiversity Development Assessment Report (BDAR) and the calculator</p> <p>Whilst the patch size determined during the assessment is not mapped, the BDAR states 'the two vegetation zones within the development site both form part of large patches of connecting vegetation having patch sizes larger than 100 ha' (page 22). However, in the Biodiversity Assessment Method (BAM) calculator the patch size has been set at zero. When the patch size is set at over 100 ha, two additional species credit species are included in the potential candidate list; Barking Owl (<i>Ninox connivens</i>) and Eastern Cave Bat (<i>Vespadelus troughtoni</i>). The BDAR should document assessment of habitat suitability for these species in Tables 5.1 and 5.2.</p>		
1.1	The assessor should resolve the inconsistency between the stated patch size in the BDAR and the data entered in the BAM calculator. The consideration of species credit species should then be updated accordingly.	The patch size within the BAM calculator has been updated to be larger than 100 ha to reflect what was stated within the BDAR. As a result of the updated patch size, the BAM calculator brings in the Eastern Cave Bat, Brush-tailed Rock Wallaby (<i>Petrogale penicillata</i>) and Barking Owl for habitat suitability assessment. The habitat suitability assessment for each species and in relation to Table 5.1 and Table 5.2 of the BDAR is provided below.



		<p><u>Eastern Cave Bat</u></p> <p>The BAM calculator identifies habitat constraints for the Eastern Cave Bat, therefore an assessment is provided as per Table 5.1 of the BDAR:</p> <ul style="list-style-type: none">• Habitat feature:<ul style="list-style-type: none">○ Caves;○ Within 2 km of rocky areas containing caves, overhangs, escarpments, outcrops, crevices or boulder piles, or within two kilometres of old mines, tunnels, old buildings or sheds.• Habitat constraint present in development site: No.• Justification: There are no caves within the development site. The development site is not within 2 km of rocky areas containing caves, overhangs, escarpments, outcrops, crevices or boulder piles, or within two kilometres of old mines, tunnels, old buildings or sheds. <p>As the habitat constraints for the Eastern Cave Bat are not present, the species does not require further assessment as per section 6.4.1.13 of the BAM. The species is therefore not required to be carried forward for further consideration in Table 5.2 of the BDAR.</p> <p><u>Brush-tailed Rock Wallaby</u></p> <p>The BAM calculator identifies habitat constraints for the Brush-tailed Rock Wallaby, therefore an assessment is provided as per Table 5.1 of the BDAR:</p> <ul style="list-style-type: none">• Habitat feature:<ul style="list-style-type: none">○ Land within 1 km of rocky escarpments, gorges, steep slopes, boulder piles, rock outcrops or cliff lines;
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		<ul style="list-style-type: none">○ Rocky outcrops/cliffs. <ul style="list-style-type: none">• Habitat constraint present in development site: No.• Justification: There are no rocky outcrops or cliffs within the development site. The development site is not within 1 km of rocky escarpments, gorges, steep slopes, boulder piles, rock outcrops or cliff lines. <p>As the habitat constraints for the Brush-tailed Rock Wallaby are not present, the species does not require further assessment as per section 6.4.1.13 of the BAM. The species is therefore not required to be carried forward for further consideration in Table 5.2 of the BDAR.</p> <p><u>Barking Owl (Breeding)</u></p> <p>As no habitat constraints for the Barking Owl are identified by the BAM calculator, an assessment is provided as per Table 5.2 of the BDAR:</p> <ul style="list-style-type: none">• Candidate species: No (species credit) Yes (ecosystem credit)• Justification: The Barking Owl inhabits woodland and open forest, including fragmented remnants and partly cleared farmland. Only breeding habitat is a species credit. The development site is largely cleared, with only very widely scattered paddock trees, and does not support suitable hollow-bearing trees for this species. The species is considered unlikely to breed within the development site.• However, the potential for the species to forage within the development site cannot be discounted and therefore the species has been retained as a candidate ecosystem credit species. However, the retention of this species does not increase the biodiversity risk weighting and no additional offsets are required.
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2. Discrepancies exist between the candidate species list in the BDAR and the calculator

There are some discrepancies in the consideration of candidate species credit species between the BDAR and the BAM calculator.

In Table 5.2 of the BDAR the following species are listed as candidate species credit species:

- Bluegrass (*Dichanthium setosum*)
- Finger Panic Grass (*Digitaria porrecta*)
- Belson's Panic (*Homophalis belsonii*)
- Slender Darling Pea (*Swainsona murrayana*)
- Squirrel Glider (*Petaurus norfolcensis*)
- Koala (*Phascolarctos cinereus*)

Table 5.4 clarifies that suitable habitat for the flora species above is located within the roadside portions of the development site only (which will be impacted by shoulder widening).

However only three of these flora species are carried forward as 'confirmed' candidate species in the BAM calculator, with the Slender Darling Pea excluded. No reason is provided for this exclusion.

For all confirmed candidate flora species in the calculator, the assessor states that surveys within the survey timetable for each species did not confirm their presence within the development footprint (we note that whilst Finger Panic Grass was detected, the project will not involve impacts within a 30 m buffer of this record).

A species survey must be undertaken for all candidate species (identified based on steps 1-3 of section 6.4 of the BAM) unless there is a documented reason to exclude them, or an expert report has been obtained or the species is presumed to be present. We note that the surveys undertaken for the project do not align with the BAM survey timetable for *S. murrayana* (if it is a candidate species).

2.1	The BDAR should clarify whether or not <i>S. murrayana</i> is considered a candidate threatened species on the development site, in accordance with the steps set out in section 6.4 of the BAM. The assessment must proceed to Step 4 of section 6.4 of the BAM at a minimum for all candidate species identified for further assessment.	<p><i>S. murrayana</i> is unlikely to occur within the development site given the heavy disturbance resulting from grazing. These areas are considered substantially degraded. However, there is potential for this species to occur in roadside vegetation, with potential suitable habitat recorded within the Orange Grove Road reserve. Therefore, <i>S. murrayana</i> is considered a candidate species.</p> <p>As the targeted flora surveys undertaken for the project do not align with the BAM survey timetable for the species, the presence of <i>S. murrayana</i> will be assumed as per section</p>
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		<p>6.4.1.21 of the BAM. Impacts to the potential roadside habitat for this species will be limited to 0.1 ha to allow for shoulder widening of an access point.</p> <p>An impact area of 0.1 ha was entered into the BAM calculator for the species, which is the maximum area of disturbance, due to the need to avoid the Finger Panic Grass, located approximately 40 m west of the proposed shoulder widening.</p> <p>For an impact area of 0.1 ha, the BAM calculator indicates that no species credits are required to offset the impacts on <i>S. murrayana</i> habitat arising from the project. The updated credit report is attached as Appendix A.</p> <p>Mitigation</p> <p>Minimisation of clearing impacts in roadside vegetation within the Orange Grove Road reserve will limit any potential impact to <i>S. murrayana</i>.</p> <p>Clearing limits will be clearly marked to prevent unnecessary clearing beyond the extent of the shoulder widening.</p> <p>Appropriate signage such as 'No Go Zone' should be installed.</p> <p>Identify the location of any 'No Go Zones' in site inductions.</p> <p>Machinery to park in dedicated parking zones, and not within the road reserve.</p> <p>An erosion and sediment control plan is to be implemented on site that will limit any indirect impacts.</p> <p>Substantial effort has been made to avoid and minimise impacts to biodiversity, as discussed within Section 6.2 of the BDAR and as the impact area to potential <i>S. murrayana</i> habitat is so small (0.1 ha), the BAM calculator has resulted in no credit requirement for the species and therefore no offsets are required for the species.</p>
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3. Threatened fauna survey extent should be justified within the BDAR

Whilst not completely clear, it appears that the northern lot within the development site (the area mapped as 'disturbed/cropped' with scattered trees) was not included in the threatened fauna surveys, following the redesign of the project footprint (BDAR Figure 5.1).

The BDAR carried forward two species credit fauna species as candidate species for further assessment. The BAM provides scope for an assessor to determine that suitable habitat is only located on specific portions of a development site and to provide justification for this, and therefore the associated survey design, within the BDAR.

In the case of the Squirrel Gilder, the BDAR states that Squirrel Gilders were only included as a candidate species as a precautionary measure, as the current development site does not actually contain suitable habitat. OEH concurs with this assessment therefore the omission of the northern lot from surveys for this species is of no consequence.

The BDAR should clarify the survey effort and survey design for the Koala.

<p>3.1</p> <p>3.2</p>	<p>The BDAR should clarify whether the fauna surveys (eg koala scat searches) extended to the northern portion of the site; and</p> <p>If the northern lot was not included in the threatened fauna surveys, the BDAR should present justification for limiting the threatened fauna surveys to the southern portion of the site (to satisfy Section 6.4 of the BAM).</p>	<p>Habitat assessment was undertaken within the northern portion of the development site to determine its habitat suitability for the Koala. This area contains very widely scattered Bimble Box (<i>Eucalyptus populnea</i> subsp. <i>bimbil</i>) trees and a completely cleared mid and ground-layer. The area is utilised for cropping and contains no native mid-storey or ground layer.</p> <p>Koala trees in this area are remote from more suitable habitat located along the Namoi River. The lack of connectivity and highly exposed trees surrounded by completely cleared mid and ground layer in the northern portion, means that Koalas attempting to traverse the surrounding cleared farmland to reach these trees would be highly susceptible to predation by foxes, dogs or other predators. If Koalas did reach these trees, their exposure to adverse weather conditions, especially heat, means that they could not remain there for long. The Koala trees are also surrounded by a hostile landscape, with cropping and use of heavy machinery as a part of farm operations. This habitat is considered 'substantially degraded' as per section 6.4.1.17 of the BAM.</p> <p>Due to the poor habitat, Koala scat searches were not undertaken within the northern portion of the development site. No evidence was found of Koalas in the targeted searches in the development site directly south of the northern portion and it appears that</p>
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		<p>the scattered trees here may be too remote from other Koala habitat south of Orange Grove Road and the development site, closer to the river.</p> <p>Given that no evidence of Koalas were found in the targeted searches directly south of the northern portion, it is unlikely that Koalas would utilise the poorer habitat in the northern portion.</p>
<p>4. Minimal harm to Aboriginal cultural heritage</p>		
	<p>OEH is satisfied that the proponent has complied with the project Secretary's Environmental Assessment Requirements and adequately undertaken an Aboriginal cultural heritage assessment, including Aboriginal consultation. OEH is also satisfied with the proposed actions of the Heritage Management Plan.</p>	<p>OGSF acknowledges and thanks the OEH for its response.</p>
<p>5. Project impacts on flood behaviour require further discussion</p>		
	<p>5.1 Further discussion is required on the impact of the development on flooding, especially the impact due to fencing and debris which may collect on the fences.</p>	<p>The revised development footprint and infrastructure layout excluded project infrastructure from the area of the first order watercourse to remove potential impacts of project infrastructure on floodwater flows. As such, there will no longer be project fencing that could restrict water flows through the first order stream.</p>



2 RESPONSE TO SPECIAL INTEREST GROUP SUBMISSION

2.1 THE NAMOI PISTOL CLUB INC.

Submission Ref:	Detail of submission	OGSF Response
271810	The Namoi Pistol Club's 50 Metre Range is situated East of the proposed Solar Farm and would be too far away to be impacted by the Overland Sun Farm Project.	OGSF thanks the Namoi Pistol Clubs for acknowledging that the 50 m pistol range which is approximately 1,550 m to the east of the original development footprint will not be impacted by the proposed solar farm development.
271810 cont'd	The Namoi Pistol Club's other Firearms Range on "Marlow" is a 900 Metre Range situated to the North East of the Proposed Overland Sun Farm Project, High up on the side of a hill in comparison to the location of the Sun Farm Solar Panels. From the elevated position of the 900 Metre Range Firing Line an estimated 35 to 40 + hectares of solar panels will be visible from the left of the firing line area.	<p>Namoi Pistol Club's (NPC) submission identified the potential distraction to members on the 900 m firing line due to the visibility of the OGSF original development footprint during the course of discharging firearms.</p> <p>Since receiving this submission, OGSF has met with the Secretary of the NPC to further discuss the project and to gather a better understanding of their use of the 900m range. Both parties are in agreement that there will be no likely effect from the original OGSF development footprint upon the NPC's continued use of the 900m firing line.</p> <p>The revised project area, as depicted (Figure 1.2 of the EIS Addendum) increases the setback of the OGSF to the NPC 900m range by approximately 550 m to 1,800m.</p> <p>Additionally, OGSF commissioned a Glare and Glint Assessment which was performed by Snowy Mountain Engineering Consultants (SMEC), which found that "nil" glare of glint will be visible at the NPC 900m range (Appendix 3).</p>



3 RESPONSE TO PUBLIC SUBMISSIONS

3.1 FLOOD

Details of issue raised:	Submission Ref:	Orange Grove Sun Farm Response
Flood impacts	268856, 264405, 267146, 268205 267620, 268623, 268800, 269082 268936, 268929, 269213, 269209 269207, 269204, 269192, 269165 269245, 269416, 269443, 269414 269380, 269370, 269367, 269287 269249, 269281, 269279, 269239 269233, 269229, 269225, 269530 269538, 269642, 269666, 269526 269512, 269491, 269487, 269474 269472, 269468, 269096, 268644.	<p>These submissions raised the topic of flooding. OGSF has commissioned a further study by GHD regarding the potential flood waters within the 1st order water course (Appendix 2). Subsequently, OGSF has revised the project footprint and layout to exclude all infrastructure from within this area (Figure 1.2 of the EIS Addendum).</p> <p>The revised project arrangement therefore does not pose a risk of adverse impact on floodwater flows within the 1st order watercourse.</p>



3.2 USE OF AGRICULTURAL LAND

Details of issue raised:	Submission Ref:	Orange Grove Sun Farm Response
<p>Twenty-seven submissions questioned the use of agricultural land for a sun farm on the basis of:</p> <p># conflicts with existing agricultural operations;</p> <p># impacts food production;</p> <p># reduced ability to store carbon in the soil;</p> <p># claims the land will be a dead zone therefore doubts are raised about the ability of the land to be returned to productive agricultural after decommissioning.</p>	<p>268856, 269141, 264405, 267148</p> <p>267146, 266512, 267620, 268861</p> <p>268623, 268668, 269082, 269114</p> <p>268884, 269088, 269096, 269139</p> <p>269121, 269215, 269190, 269257</p> <p>269370, 269239, 269233, 269231</p> <p>269538, 269642, 269532, 268644</p>	<p>As outlined in Chapter 6.5.2 of the EIS, the development footprint is zoned RU1 under the Gunnedah LEP and the project will for a period alter the current land use of the development footprint from solely agricultural production to electricity generation by solar energy, noting there will be the possibility that sheep may utilised to control ground cover.</p> <p>The projects development footprint is on land classified as Biophysical Strategic Agricultural Land (BSAL) which in NSW is estimated to measure 2.8M ha. The revised project infrastructure layout will cover 223 ha and therefore the impact on the state BSAL is approximately 0.008% of the total NSW area, and 0.09% of the total area with the Gunnedah LGA. Further, in 2015 the World Bank reported there was 46.126M ha of arable land as defined by the FAO in Australia, therefore the 223ha represents less than 0.0005% of the total arable area.</p> <p>Land management practices within the development footprint during the operational period of the sun farm will avoid or minimise impacts on adjoining land uses and ensure the development footprint is not precluded from being returned to a productive agricultural use after decommissioning.</p> <p>The project landowners do not foresee any impact upon their respective commercial farming operations and do not plan to change their current use nor management of adjoining areas once the sun farm is operational. Likewise, neighbouring properties operating as commercial farms are not anticipated to be impacted outside of possible short term construction disturbance.</p> <p>Claims that the sun farm land will become a “dead zone” and reduce the soils ability to store carbon are juxtaposed to actual operational evidence, such as the University of Queensland’s 10 ha 3.3 MW solar facility near Gatton in Queensland, where sheep are successfully utilised to control the pasture that actively grows under the solar panels. The facility consists of sections of fixed, single axis and dual axis solar arrays.</p>



		<p>Should mowing be utilised as the method to control grass growth under the solar panels, the grass will be directly mulched back onto the soil surface therefore building soil organic matter and enhancing carbon capture while improving water infiltration.</p> <p>Concerns regarding weed infestations will be addressed through the adherence of weed management protocols which will include measures for identification, management, and ongoing monitoring of weeds within the development footprint.</p>
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3.3 VISUAL / GLINT & GLARE / PROXIMITY

Details of issue raised:	Submission Ref:	Orange Grove Sun Farm Response
Twenty submissions raised concerns relating to the visual impact plus glint and glare arising from the proximity of the sun farm to residences and Orange Grove Road.	264405, 267146 268861, 268623 269082, 269114 269139, 269215 269190, 269188 269239, 269233 269642, 269638 269666, 269526 269512, 269505 269491, 269487	<p>The Chapter 6.6 of the EIS summarises the findings of the Visual Impact Assessment which can be found as Appendix G of the EIS.</p> <p>OGSF's revised project layout and footprint (Figure 1.2 of the EIS Addendum) includes the following changes:</p> <ul style="list-style-type: none"> increased the distance between receptor R1's immediate boundary and the nearest project related infrastructure by 50m, making the total separation approx. 200m (also refer to Appendix 4 - Setback & Landscape Cross Section); established a 20 m setback for project infrastructure along the balance of the common boundary between the project and receptor R1's property; increased the separation distance between receptor R2 and nearest project related infrastructure by approximately 500m; removed the common boundary between the project and R2's property resulting in a minimum separation of approximately 260m to project related infrastructure; increased the separation distance between the Namoi Pistol Club's 900m range and nearest project related infrastructure by approximately 550m to approximately 1.8 km;



	268644	Additionally, OGSF commissioned a Glare and Glint Analysis which was performed by Snowy Mountain Engineering Consultants (SMEC). The results of this study show that “nil” Glare or Glint will be visible at any local receptor because of OGSF’s use of single axis tracking systems and PV antiglare technologies (Appendix 3).
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3.4 CONSULTATION

Details of issue raised:	Submission Ref:	Orange Grove Sun Farm Response
Twenty submissions raised concerns that there was insufficient consultation with neighbouring landowners, community and wider population.	268876, 268650 268623, 268668 268884, 269139 269215, 269207 269192, 269188 269416, 269414 269642, 269666 269532, 269512 269491, 269487 269474, 269468 268644	<p>As required under the SEAR’s issued for the Orange Grove Solar project, OGSF undertook a program of consultation with Government agencies, stakeholders and the local community as outlined in detail within the EIS under Chapter 5 Stakeholder consultation and in Appendix B Consultation Material.</p> <p>The following consultation was undertaken in regard to the project leading up to the lodgement of the EIS on 24 May 2018:</p> <ul style="list-style-type: none"> • Direct engagement with the non-project related receptors as identified in Figure 2.1 of the EIS through either face to face meetings or phone calls where meetings were not warranted by the receptor; • Direct engagement was also made with various stakeholders such as State and Local government agencies, Gunnedah Shire Council, Gunnedah Chamber of Commerce, local members of parliament through either face to face meetings or phone calls where meetings were not warranted; • Face to face meetings, or phone calls where meetings were not warranted, with various Orange Grove Road, Gunnembene Road, Oxley Highway and Tudgey Road landowners; • Mail box drop of the project factsheet to residents along Orange Grove Road, Kelvin Road, Old Blue Vale Road, Campbell Road and Stanley Lane with mailboxes notifying them of the proposal and dates for the community information sessions; • Project factsheets were provided at the Gunnedah Shire Council reception and the Gunnedah Services and Bowling Club; • Project factsheet attached to the notice board at the Carroll Store on the Oxley Highway; • Commentary in a number of Namoi Valley Independent news articles and one in The Northern Daily Leader;



		<ul style="list-style-type: none"> • News articles published on various renewable energy websites; • Continued dialogue with local community through numerous telephone discussion throughout the exhibition period; • Development of a project website to provide information and updates plus provides the opportunity for the public to forward comments to, or requests for information from, OGSF; • Two community information sessions that were held in Gunnedah and open to the public which were advertised in the Namoi Valley Independent. <p>Feedback collected from the various meetings and discussions held have led to the incorporation of mitigation measures, such as vegetative screening, project boundary setbacks and siting of projects substation being positioned to alleviate impacts of the project on neighbouring landowners.</p> <p>Since the lodgement of the EIS in May 2018, OGSF has continued to liaise with a number of local landowners through phone calls and face to face meetings to collect further detailed information to refine the project footprint in an effort to further alleviate the potential impact upon neighbouring landowners.</p> <p>OGSF is committed to ongoing consultation with the stakeholders and community as the project progresses through the ongoing development phases of the project.</p>
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3.5 RIGHT TO FARM

Details of issue raised:	Submission Ref:	Orange Grove Sun Farm Response
A number of submissions raised concerns or beliefs that the solar farm will have a negative impact upon neighbouring properties ability to conduct farming operations in the future.	268856, 264405 268861, 269082 269139, 269215 269188, 269245	<p>The NSW Government developed the Right to Farm policy to address potential land use conflict. The policy states it will plan for land use near agriculture that minimises conflicts and where possible enable future growth and adaption, while providing for other industries to co-exist where compatible. A cornerstone element of the Right to Farm Policy is for farmers to undertake lawful agricultural practices without conflict or interference arising from complaints from neighbours and other land users.</p> <p>As outlined in Chapter 6.5.4 Management and Mitigation, the Environmental Management Plan (EMP) will include a number of land and management (including construction) measures that will be implemented to reduce the impact of the project on the</p>



	269257, 269370	land, in particular to manage erosion, weed infestation, surface water run-off, and biosecurity so as not to infringe upon neighbouring landowners right to farm so the two industries can co-exist, as they currently do across a number of areas where solar farms situated on agricultural land currently operate.
	269304, 269538	
	269642, 269638	
	269487, 268644	
		In turn, a continuation of the commercial farming operations of the adjacent and neighbouring farms are not considered to pose an adverse impact upon the future operations of the OGSF.

3.6 BIODIVERSITY / ENVIRONMENTAL / WILDLIFE

Details of issue raised:	Submission Ref:	Orange Grove Sun Farm Response
Fourteen submissions raised concerns with regards to the impact upon native flora and fauna found in the Gunnedah district.	264405, 267146	Appendix C of the EIS – Biodiversity development assessment report (BDAR), provides an assessment of the potential impacts of the project on biodiversity as required by the SEAR's.
	267620, 268650	
	268623, 269190	The BDAR and outcomes of field surveys informed OGSF of the relevant ecological aspects of the development site. This allowed for avoidance or minimisation of adverse impacts to the project land, such that no biodiversity offsets are required by the project.
	269188, 269245	
	269257, 269370	As outlined in the BDAR, there is one Koala feed species found within the development footprint commonly known as Bimble Box, or Poplar Box, which is an endemic tree of Australia and found in central and coastal Queensland through to central New South Wales. Under SEPP 44, the proportion of Bimble Box present trees within the development footprint means the area is considered potential Koala habitat. However, the targeted field survey undertaken within the development footprint found that the scattered nature of the tress, degraded vegetation and nil recording of Koala scats resulted in the development footprint not being considered core Koala habitat under the SEPP 44 guidelines. As such, it is considered the project won't adversely impact core Koala habitat, their free movement, nor populations within the local area.
	269638, 269526	
	269505, 269487	
	268644	
		The addendum BDAR for the revised development footprint further concludes that the extent of proposed low-quality native vegetation removal required for the revised development footprint is considered to have a limited impact on the local flora and fauna.



		The bird deaths referred to in one submission relate to a concentrated solar thermal plant which utilises mirrors/lenses to reflect large areas of sunlight, or thermal energy, and concentrate the sunlight onto a small area. This technology is different to the photovoltaic (PV) solar panels proposed for OGSF, which absorb sunlight rather than reflect it.
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3.7 DEVALUATION / NO COMPENSATION

Details of issue raised:	Submission Ref:	Orange Grove Sun Farm Response
Thirteen submissions noted that either compensation is not payable to neighbouring landholders and raised concerns that neighbouring landholders will suffer from a devaluation of their land should the project proceed.	268856, 267148 267620, 268861 269082, 269114 269139, 269190 269257, 269239 269231, 269642 269487, 268644	OGSF is not aware of any published evidence by accredited valuation experts or peer reviewed analysis that supports the assertion that the construction and operation of a solar farm will cause a devaluation of neighbouring land.

3.8 SOCIO-ECONOMIC

Details of issue raised:	Submission Ref:	Orange Grove Sun Farm Response
Eleven submissions raised concerns that the socio-economic benefits of the project were not adequately explained nor do they	264405, 267148 267146, 267620	The impact assessment of the socio-economic benefits to the Gunnedah LGA, as outlined in Chapter 6.13 Socio-economic of the EIS, found that based on the results of the local Gunnedah stakeholder engagement, there is a positive attitude and broad community support for the OGSF.



outweigh the negative impacts of the project.	268623, 269082	The implementation of the management and mitigation measures proposed will diminish the potential adverse impacts of the project and provide additional economic stimulus, employment and investment in community infrastructure and services, leading to a net positive outcome for the Gunnedah LGA.
	269190, 269370	
	269642, 269505	
	269472, 268644	

3.9 TRAFFIC / TRANSPORT / ROADS

Details of issue raised:	Submission Ref:	Orange Grove Sun Farm Response
Submissions raised concern over non-treatment of the unsealed section of Orange Grove Road during construction, particularly during school bus times.	264405, 268656	The Traffic Impact Assessment (TIA) is Appendix I of the EIS, Additionally a Construction Traffic Management Plan (CTMP) will be developed in consultation with GSC and DP&E before the commencement of construction. Section 2.4 of the TIA notes that Hopes Coaches operates a morning (8:00 am) and afternoon (4:00 pm) school bus service on school days along Orange Grove Road. It is further noted in Table 7.1 of the EIS, that in order to minimise impacts on traffic flow along Orange Grove Road, deliveries and other vehicle movements will avoid peak hour and school bus times, whenever possible.
	269091, 269416	
	269414, 269666	
	269512, 269487	
	269474, 269468	
268644		

3.10 HEALTH

Details of issue raised:	Submission Ref:	Orange Grove Sun Farm Response
Eight submissions raised concerns relating to health of both the landowners and livestock neighbouring the sun farm due to	269114, 269215	Electric and magnetic fields (EMF's) are addressed in Chapter 6.10 Electromagnetic interference of the EIS. The Aust. Radiation Protection and Nuclear Safety Agency (ARPANSA) advises EMF's exist wherever electricity is generated, transmitted, distributed
	269239, 269233	



<p>its' proximity and electric and magnetic fields (EMF's) due to the generation of electricity.</p>	<p>269526, 269487 269538, 269082 268644</p>	<p>or used and are strongest closest to their source (ARPANSA 2015). ARPANSA further notes that there is no established evidence that exposure to magnetic fields from power lines, substations, transformers or other electrical sources causes any health effects.</p> <p>Notwithstanding, the International Commission on Non-Ionizing Radiation Protection (ICNIRP) 1998 guidelines defined reference levels for occupational and general public exposure to prevent potential adverse health effects from exposure to EMFs. From the EIS it will be noted that the reference levels are well below the defined exposure limits.</p>
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3.11 CUMULATIVE IMPACTS

Details of issue raised:	Submission Ref:	Orange Grove Sun Farm Response
<p>Six submission raised concerns due to the cumulative impacts of both the project and Gunnedah Solar Farm project upon both the local and wider area and community.</p>	<p>268668, 269082 269245, 269538 269532, 269487 268644</p>	<p>The Secretary's Environmental Assessment Requirements (SEAR's) issued for the OGSF required an assessment of the potential cumulative impacts of both the OGSF and Gunnedah Solar Farm (GSF).</p> <p>The cumulative impacts are addressed in the EIS under Chapter 6.15. This includes visual, capability of land use, traffic, noise, biodiversity, the temporary impact on Gunnedah town accommodation and services.</p>

3.12 FIRE / HAZARDS

Details of issue raised:	Submission Ref:	Orange Grove Sun Farm Response
<p>Five submissions raised concerns relating to a potential increase in fire</p>	<p>264405, 267620 269082, 269188</p>	<p>Chapter 6.11 of the EIS, addresses bushfire risks as required under the SEAR's. It is noted that both the NSW Rural Fire Service (RFS) Bush Fire Prone Land online mapping tool and the Gunnedah Shire Council bushfire prone mapping indicate that the site is not bushfire prone. Notwithstanding, OGSF has committed to prepare and implement a bushfire management plan (BMP).</p>



hazard due to the infrastructure associated with the sun farm.	269487, 268644	
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3.13 CONSTRUCTION DISTURBANCE

Details of issue raised:	Submission Ref:	Orange Grove Sun Farm Response
Concerns were raised with regard to construction disturbance, namely vibration, dust and noise, upon the neighbouring landowners and livestock during the construction period.	268856, 268861 269538, 269505 269487, 268644	Chapter 3.4 in the EIS addresses potential construction disturbances over the proposed construction period. As required by the SEAR's, studies were undertaken to identified the potential impacts that require management and mitigation measures. Section 7 of EIS outlines the management and mitigations measures to be incorporated into the environmental management strategy and relevant management plans and protocols to alleviate impacts of the project on the surrounding environment.

3.14 GROUNDWATER USE

Details of issue raised:	Submission Ref:	Orange Grove Sun Farm Response
Submissions question the validity of the water use for non-agricultural purposes (ie. cleaning the panels due to agricultural pursuits within the vicinity of the sun farm).	264405, 267148 267146, 269487 268644	It is proposed the project will source water from the Upper Namoi Zone 4: Namoi Valley (Keepit Dam to Gin's Leap) Groundwater Source (Zone 4). Zone 4 water extraction is capped at 25,700 ML per water year. The respective water requirement proposed for construction and operation are 15 ML and 3 ML per year which represent 0.06% and 0.01% of the total allowable water extraction for Zone 4 in a single water year.

3.15 SOILS / EROSION

Details of issue raised:	Submission Ref:	Orange Grove Sun Farm Response
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<p>Three submissions raise concerns about the impacts of the project on the site soils and their erodibility due to the construction and operation of the sun farm.</p>	<p>269642, 269491 269487, 268644</p>	<p>OGSF will develop a Soil and Water Management Plan and an Erosion and Sediment Control Plan which will be part of the projects Construction Environment Management Plan.</p>
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3.16 GOVERNMENT FUNDING

Details of issue raised:	Submission Ref:	Orange Grove Sun Farm Response
<p>Submissions infer government funding is required to develop the project.</p>	<p>269141, 267620, 269082, 269370 268644</p>	<p>The OGSF is being developed on its' commercial merit.</p>

3.17 CONFLICTING TOWN PLANNING

Details of issue raised:	Submission Ref:	Orange Grove Sun Farm Response
<p>Submissions infer the project does not align with NSW planning bodies objectives / guidelines.</p>	<p>264405, 267146 269082, 268644</p>	<p>Chapter 4 of the EIS addresses the Regulatory framework under which the OGSF is assessed in seeking planning approval.</p>

3.18 CLIMATE CHANGE AND EFFICACY OF SOLAR FARMS

Details of issue raised:	Submission Ref:	Orange Grove Sun Farm Response
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Submissions question the efficacy of solar farms impact on climate change.	269082, 269088 268644	The efficacy of solar farms and their impact on climate change is beyond the scope of the SEAR's issued for the project.
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3.19 HEAT ISLAND EFFECT

Details of issue raised:	Submission Ref:	Orange Grove Sun Farm Response
Submissions infer OGSF will produce a heat island effect within the local area.	267146, 269257 269082, 268644	Consideration of the heat island effect is beyond the scope of the SEAR's issued for the project.

3.20 EUROPEAN HERITAGE

Details of issue raised:	Submission Ref:	Orange Grove Sun Farm Response
One submission indicated that there had been no consideration of early European settlement.	264405, 268644	Section 6.4 of the EIS provides the findings of the assessment for Historic heritage, as required under the SEAR's, and provides management and mitigation measures in the event of an unexpected find.