Revised Land Use Conflict Risk Assessment (LUCRA)

Risk Evaluation, which considers the probability (P), consequence (C) of the activity and the residual risk rating (RRR). Definitions of probability and consequence are outlined in the Land Use Conflict Risk Assessment Guide' (*Department of Trade and Investment, 2011*)

Activity	Identified Potential Conflict	Mitigating factors	P	C	RRR
Use of Agricultural Land	Impacts to agricultural land are summarised below: • Disturbance to protected agricultural land uses (Good Quality Agricultural Land, Strategic Cropping Land and Priority Agricultural Land Uses) • Loss of productive agricultural land for the life of the proposal (expected to be approximately 25 years). This loss of agricultural activity would occur within the direct footprint only • Potential changes to soil properties.	• The solar farm will cover approximately 38% of the Subject Land and the remaining area will continue to be used for cropping agriculture • Managed grazing will be used to maintain the height of ground cover during operation of the Proposal. So, the land can continue to be used for agricultural purposes but represents a change from cropping agriculture to grazing agriculture albeit at a reduced capacity to grazing of the site without solar panel infrastructure • Except for limited and short-term earthworks associated with construction and operational use of internal tracks the majority of the soil surfaces would not be impacted by the development in the long term; no large areas of reshaping or excavation are proposed • The solar farm will help rest the land and allow the nitrogen content of the soil to rise naturally • The development has a reversible nature so the land can be returned to its former agricultural use at the end of the operational period • Preparation of a land management plan as part of the EIS to determine how the land will be managed during operation of the solar farm so it can go back into agricultural production upon decommissioning.	C	4	8
Adjacent land use activities	Impacts to solar farm operations from neighbouring land use are summarised below: • Agricultural activities such as lime, fertiliser and pesticide application may result in the dispersal of dust and/or agricultural products on to solar panels	The *Right to Farm Policy* (2015) was formed to ensure farmers could undertake lawful agricultural practices without conflict or interference arising from complaints from neighbours and other land users. The main objective of this policy as described in the *Right to Farm Policy Summary* document is to 'reduce the number of complaints and legal	B	5	7

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	• Dust generation caused by agricultural cultivation activities	claims made against farmers, while preserving the rights of legitimate complaints' (NSW Department of Primary Industries 2015). GSF fully appreciates the implications of installing and operating solar infrastructure adjacent to land where agricultural practices occur. Consideration of neighbouring activities will be taken during the preparation of the Operational Environment Management Plan. It is anticipated that compliant agricultural operations undertaken in proximity of the Solar Farm will not have significant impacts on the operation and functionality of the solar farm. Operational maintenance of the solar panels will address short term potential impacts of dust and spray drift from neighbouring practices. The Yearly Update 2019-17 report on the Right to Farm Policy provided by the Department of Primary Industries found that 'there is limited evidence from the survey or interviews that agricultural land use conflict is having an adverse impact on agriculture'. GSF undertook consultation with nearby landholders during preparation of the EIS and will continue to consult with these landholders during operation of the solar farm to ensure successful operations within the agricultural setting.			
Use of land with mineral resources	Impacts to land with mineral resources are summarised below: • The potential exploration, assessment or extraction of minerals onsite would be impeded by the solar farm for a 25-year period.	• The proposal is expected to have a 25-year operational period and as the inground infrastructure will be relatively shallow (<4m) and all the infrastructure will be removed upon decommissioning no long-term mineral exploration impacts are expected and the land could be explored upon decommissioning • Mining titleholders have been contacted and both have confirmed that they have no immediate plans to develop the area (refer Section 5 of the EIS).	D	3	9

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Land use change	Change from cropping agriculture to electricity generation coupled with grazing agriculture.	• The site has only been used for cropping for the last 20 years. Prior to that it was used for grazing land. The proposal will revert the land to a former use whilst adding a new land use • The development is reversible and the land can be returned to its former use upon decommissioning.	C	4	8
Visual	Visual impact to sensitive receivers nearby and loss of scenic agricultural views. The proposed development has a variable level of visibility but the EIA process has identified two public viewpoints and 22 potentially affected private viewpoints. The majority of these residences have some localised vegetation screening around their properties. On-site there is a temporary residential dwelling and sheds for storing agricultural equipment. The residence is located onsite and faces Orange Grove Road. The property is surrounded by native trees with current views towards the Site. The change in the use of the land provides a moderate impact visual transition between commercial electricity generating uses and agricultural areas and includes changes to general amenity and the character of the landscape.	• The mitigation measures required to alleviate visual impacts are provided in Section 6.4 of the EIS. • Updated mitigation measures are provided in Appendix B of the RTS report.	B	3	17
Flooding	Concerns about the effect the solar panels will have on the direction and flow of the flood waters.	• The most significant influence on the flood levels associated with the Solar Farm is the fencing, and the degree of blockage caused by flood debris. A number of configurations were modelled to identify	C	2	18

Activity	Identified Potential Conflict	Mitigating factors	P	C	RRR
		a suitable fencing configuration that would meet both the public safety and security requirements whilst minimising flood impacts upon sensitive receivers and the environment • Flood modelling results and mitigation measures are detailed in Appendix J of the EIS. Updated flood modelling is provided in Appendix C of the Gunnedah RTS report.			
Fencing	Visual impact of fences on local amenity. Perimeter fences up to 2.5 m high will be constructed around the Proposed Development.	• Visual amenity impacts and mitigation measures are detailed in Section 6.4 of the EIS. • Updated mitigation measures are provided in Appendix B of the Gunnedah RTS report.	D	3	9
Impact on public roads	Increase in heavy vehicle movements on local roads due to construction traffic. Impact of construction traffic along school bus routes.	• Construction traffic management mitigation measures are detailed in Section 6.6 of the EIS. • Updated traffic mitigation measures resulting from public exhibition submissions are provided in Appendix B of the Gunnedah RTS report. • Updated traffic Impact Assessment resulting from public exhibition submissions is provided in Appendix D of the Gunnedah RTS report.	C	3	13
Property	Potential decrease in land and property values.	The impacts of a solar farm on neighbouring property values has not been studied in-depth however there have been numerous studies on the impacts of wind generation on neighbouring property values in the United States (*Hoen et al., 2010; Hoen et al. 2015; Vyn and McCullough 2014*). These studies found the impact of wind energy generation on neighbouring property values to be negligible. As solar farms, do not have the same impacts as wind farms the impacts on property values caused by solar farms are anticipated to be less than the impacts of wind farms.	D	2	14

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Aviation	• Perceived glare impacts • Impact to the flight path • Tall infrastructure may present a direct hazard to aircraft.	• Glare impacts are assessed in Section 6.4 of the EIS. • The Proposal is approximately 9km east of the Gunnedah aerodrome and not runway aligned • The majority of the infrastructure is low-lying (approximately 4.0m tall). The tallest component would come from the lightning pole which is expected to be approximately 22m tall and as such would not impact the flight path or present a direct hazard to aircraft. • Consultation with Gunnedah Airport and CASA is discussed in Section 5 of the EIS.	D	4	5
Noise	Noise will impact sensitive receivers during the construction period (approximately 12 months). Construction activities will be limited to standard working hours: • Monday to Friday, 7am to 6pm • Saturday, 8am to 1pm • No construction work is to take place on Sundays or public holidays. Construction noise and associated impacts are discussed in Section 6.5 of the EIS.	• The mitigation measures required to alleviate noise impacts are provided in Section 6.5 of the EIS.	C	3	13
	Noise will impact sensitive receivers during operation due to the presence of a substation onsite. Operational noise and associated impacts are discussed in Section 6.5 of the EIS.	• The mitigation measures required to alleviate noise impacts are provided in Section 6.5 of the EIS.	C	3	13
Weed and Pest management	The proposal has the potential to introduce disease, weeds, vermin or destructive influences to the site. Weed and pest control at the Site is the responsibility of the Proponent. The risk from	• A Land Management Plan which includes weed management shall be developed and incorporated into a CEMP and OEMP to prevent further weed dispersal into retained native woodland habitats.	D	4	5

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	noxious weeds and pests is low but would be subject to ongoing monitoring and management.				
Use of pesticides	Pesticides may be used to control weeds at the site to ensure that the land can be returned to agricultural use upon decommissioning. The distance from neighbouring properties means the potential conflict is assessed as low.	Vegetation management practices will be implemented to minimised pesticide use such as: • The use of sheep to graze between the panel rows to manage vegetation loads • Applying pesticides in accordance with the *Pesticides Act 1999*, such that only registered pesticides are used based on label instructions that are designed to minimise impacts on surrounding land.	D	5	2