APPENDIX I

Land use conflict risk assessment

AMPYR

Shell ENERGY

EMM creating opportunities

Activity	Identified potential conflict	Probability (P)	Consequence (C)	Risk ranking	Management strategy (method of control)	Revised risk ranking (P;C)	Performance target
Weed and pest management	Increased distribution of weeds during construction as a result of increased vehicle and pedestrian movements.	B	4	12	To manage the transfer of weeds and pathogens to and from work areas, a washdown bay will be included at the site access to clean vehicles and equipment prior to arrival and when leaving the work areas. The focus will be to minimise the transfer of soil and seed material. This will occur during vegetation clearing and construction and operation. The project's construction environmental management plan (CEMP) and environmental management plan (EMP) will include weed management protocols, such as measures for the identification, management, and ongoing monitoring of weeds on-site.	5 (D;4)	Effectiveness will be measured as part of the CEMP and EMP.
	Increased presence of pest animals during construction as a result of increased food waste	C	4	8	Pest animals may be encouraged by food sources from construction works and general disturbance. If pest control is considered necessary, it will generally involve a routine baiting program in consultation with the project landholders and neighbouring landholders.	5 (D;4)	Effectiveness will be measured as part of the CEMP and EMP.
Agricultural land and productivity	Removal of high quality agricultural land from production	A	5	11	The project is considered to be a temporary and reversible change in land use. Upon decommissioning the project infrastructure will be decommissioned and the study area returned to its pre-existing land use, namely suitable for the grazing of sheep and cattle, or another land use as agreed by the project owner and the landholder at that time. The project will occupy a small portion of land for the purpose of a battery (approximately 13 ha). This is not a significant land requirement and the remainder of the landholding will be retained for use for rural purposes. There is a minor area (~0.9 ha) of BSAL mapped within the disturbance area associated with the project. This area will comprise a section of the site access track that connects with Goolma Road, the washdown bay, and a portion of the temporary construction laydown area. The portion of BSAL potentially impacted by the project is already impacted by the existing access track, accordingly project activities are not expected to impact this area significantly.	11 (A;5)	Rehabilitation objectives and strategies (including performance measures) will be established in the arrangements with landowner.
	Reduced agricultural productivity of land under project infrastructure during operations	A	5	11	The land will not be available for agriculture during the life of the project, however, lands subject to infrastructure with a small footprint or temporary disturbances will be able to be maintained or reinstated following appropriate landform design and rehabilitation.	11 (A;5)	Rehabilitation objectives and strategies (including performance measures) will be established in the arrangements with landowner.
Noise	Construction noise and vibration and associated impacts on residents	B	3	17	Construction noise impacts have been assessed as part of the noise and vibration impact assessment (refer Appendix K of the EIS). Construction is to be during standard hours of 7am to 6pm Monday to Friday and 8am to 1pm Saturday. Where works outside of standard hours are unavoidable, noise will be managed in accordance with the noise limits of the Interim Construction Noise Guideline (DECC 2009). Construction vibration impacts are not anticipated as the nearest residences (R1 and R23) are located approximately 570 m and 700 m respectively to the closest proposed construction activities. These residences are beyond the safe working distances for structural damage and likely below the levels for human response. Construction noise and vibration management and mitigation will be addressed in the CEMP.	9 (D;3)	Effectiveness will be measured as part of the CEMP, which will include reference to relevant noise criteria
	Operational noise and associated impacts on resident	B	3	17	Operational noise impacts have been assessed as part of the noise and vibration impact assessment (refer Appendix K of the EIS). Noise modelling has demonstrated noise limits are satisfied at all assessment locations during day and night operations with expected utilisation of the project with the implementation of the noise mitigation proposed. During the evening assessment period, there is potential for exceedance at two residences. Feasible and reasonable mitigation measures (including an acoustic barrier) will be implemented.	5 (D;4)	Effectiveness will be measured as part of the EMP, which will include reference to relevant noise criteria
	Noise from increased vehicle movements on local roads during construction and associated impacts on residents	B	5	7	Road traffic noise impacts have been assessed as part of the noise and vibration impact assessment (refer Appendix K of the EIS). As per the NSW Government's Voluntary Land Acquisition and Mitigation Policy, a noise level of, or less than, 2 dB above the relevant noise goal is considered to have negligible impacts and would not be discernible by the average listener. Assessment of day construction traffic predictions confirm compliance with the <2dB increase criterion of the Road Noise Policy for construction vehicles associated with the project. Operational traffic will be minor. Construction noise and vibration management and mitigation will be addressed in the CEMP.	2 (D;5)	Effectiveness will be measured as part of the CEMP, which will include reference to relevant noise criteria
Air quality	Impacts to neighbouring properties and livestock resulting from increased dust generated during construction works	C	4	8	Appropriate measures will be included in the CEMP to manage dust generation associated with the project during construction. Where required, water trucks or water suppression will be used for dust suppression at disturbed areas where required. Disturbed areas will also be reinstated and stabilised as soon as practicable to minimise risks of dust generation.	5 (D;4)	Effectiveness will be measured as part of the CEMP.
	Dust from vehicle movements	D	4	5	Appropriate measures will be included in the CEMP to manage dust generation associated with trucks and plant tracking across disturbed areas of the site.	5 (D;4)	Effectiveness will be measured as part of the CEMP.
Visual amenity	Visibility of construction activities and vegetation clearing from neighbouring properties and the local road network	B	4	12	The visibility of the project during construction has been assessed as part of the visual impact assessment (refer to Appendix J of the EIS). Due to the temporary nature, the site establishment works and construction activities are considered unlikely to have significant visual impacts on passing motorists or nearby receptors. Appropriate measures will be included in the CEMP to manage visual impacts during construction.	9 (C;4)	Effectiveness will be measured as part of the CEMP.
	Visibility of project infrastructure from residences and the local road network.	A	3	20	The visibility of project infrastructure from surrounding viewpoints has been assessed as part of the visual impact assessment (refer to Appendix J of the EIS). Landscaping will be installed along the north, east, south and west sides of the BESS facility. This will help screen project infrastructure visually from the roadways and residents. The final location and extent of landscaping will be determined during detailed design and following subsequent discussions with the property owners as part of the preparation of the environmental management plan (EMP).	7 (B;5)	Effectiveness will be measures as part of the EMP
	Potential for night lighting from the project to impact neighbouring properties	D	5	2	All external lighting will be installed as low-intensity lighting (except where required for safety or emergency purposes) and will comply with Australian Standard AS 4282 (INT) 1997 – Control of Obtrusive Effects of Outdoor Lighting. In addition, all external lighting will not shine above the horizontal. Further, the proposed landscaping will reduce the visibility of the project infrastructure, which will also mitigate any potential for lighting impacts.	5 (D;4)	Compliance will be measured in the CEMP and EMP.
	Glare/reflectivity from	C	4	8	Undulation within the landscape, favourable topography, and existing vegetation in the landscape will reduce the duration and the number of locations from which reflections may be visible. Further, the proposed landscaping will reduce the visibility of the project infrastructure, which will also mitigate any potential for glint or glare impacts.	5 (D;4)	Compliance will be measured in the CEMP and EMP.
Security	Change in land use resulting in increased pedestrian and vehicle traffic on-site during the project's construction period and potential for theft and vandalism at neighbouring properties.	C	3	13	A zero-tolerance policy on theft will be implemented on-site throughout the project's construction and operation period. Surrounding landholders, project landholders, and law enforcement will be provided with the primary contractor's contact information. The CEMP will include a Code of Conduct for the project's workers (particularly to avoid anti-social behaviour at peak construction times).	9 (D;3)	Compliance will be measured in the CEMP and EMP.
	Change in land use resulting in vandalism and theft of project infrastructure and construction materials	C	4	8	A zero-tolerance policy on theft will be implemented on-site throughout the project's construction and operation period. Surveillance cameras and signs will be implemented to deter vandalism and theft. Chain mesh security fencing will be installed to control access.	5 (D;4)	No action required.

Activity	Identified potential conflict	Probability (P)	Consequence (C)	Risk ranking	Management strategy (method of control)	Revised risk ranking (P;C)	Performance target
Safety	Safety of children due to increased vehicle movements along the local road network.	D	2	14	The CEMP will incorporate a Driver Code of Conduct and will include: - safety initiatives for transport through residential areas and/or school zones and along the school bus route on Goolma Road; - an induction process for vehicle operators and regular toolbox meetings; and - a complaint resolution and disciplinary procedure.	14 (D;2)	Compliance will be measured in the CEMP. A complaint resolution and disciplinary procedure will function to address any issues identified by the local community and other road users.
Property values and council rates	Devaluation of neighbouring properties due to proximity to project infrastructure.	D	3	9	While economic analyses for the industry in relation to valuation and pricing of land is not yet existing, and there are many factors that influence land values, inference can be drawn from one key factor, which is amenity and specifically, the impacts to the amenity of neighbouring properties and the locality. The EIS and supporting technical assessments have considered potential amenity impacts from the project's construction and operations. Construction impacts will be temporary in nature and are therefore considered unlikely to have a lasting impact on the amenity of the locality. The residual impacts associated with the ongoing operation of the project (ie after the implementation of proposed management and mitigation measures, such as landscaping) are predicted to be minimal.	9 (D;3)	No action required.
	Impacts to the council rates of neighbouring properties due to the change in land use within the development footprint.	D	3	9	The rating category for the land within the development footprint will likely need to change from 'farmland' to 'business' in accordance with the NSW Local Government Act 1993 . This could result in some increase in land value and subsequent increases in rates; however, it is not anticipated that this will impact land value or council rates on neighbouring agricultural properties. No management strategy is proposed to address this potential conflict.	9 (D;3)	No action required.
	Potential health impacts due to proximity to project infrastructure.	E	2	10	Electric and magnetic fields have been considered in the preliminary hazard analysis (refer to Appendix N of the EIS). The fields attenuate rapidly with distance. The International Commission on Non-Ionizing Radiation Protection reference level for exposure to the general public is not exceeded and impact to the general public in surrounding land uses will be negligible. Design controls will be implemented to limit exposure to electric and magnetic fields.	10 (E;2)	No action required.
Traffic	Increased vehicle movements along the local road network during construction and subsequent impacts on accessibility and commute times.	C	4	8	To minimise impacts on traffic flow along with the local road network, deliveries and other vehicle movements will avoid peak hour times, whenever possible. No vehicles associated with the construction of the project will be turning onto Twelve Mile Road.	8 (C;4)	The construction traffic management plan will include a complaint resolution and disciplinary procedure as a mechanism to address any issues identified by the local community and other road users.
	Increased vehicle movements along the local road network during operation and subsequent impacts on accessibility and commute times	D	4	5	Vehicle movements during operations will be much lower than during the project's construction and are estimated to be about four daily trips (three light and one heavy vehicle). These volumes are unlikely to have any noticeable impact to the road network.	5 (D;4)	The EMP will include a complaint resolution and disciplinary procedure as a mechanism to address any issues identified by the local community and other road users.
	Impact of vehicle movements on school bus route accessibility and commute times	C	4	8	Twelve Mile Road will not be utilised by project-related traffic due to its proximity to and use by rural residential landholders and school buses, which use this road during the morning and afternoon school run.	8 (C;4)	The construction traffic management plan and EMP will include a complaint resolution and disciplinary procedure as a mechanism to address any issues identified by the local community and other road users.
Soil erosion	Soil erosion leading to land and water pollution.	C	3	13	An erosion and sediment control plan and soil stripping and management plan will be prepared prior to construction. A suite of management and mitigation measures will be implemented including.	5 (D;4)	Effectiveness will be measured as part of the erosion and sediment control plan and soil stripping and management plan.
Water	Change to surface water flows and water quality as a result of construction and operations of the project.	C	3	13	Monitoring of watercourse and riparian corridor condition for Watercourse A immediately adjacent to the project will be undertaken at an appropriate frequency, with maintenance undertaken as required to minimise scouring and erosion in particular in the vicinity of the new watercourse crossing. Implementation of erosion and sediment control plan. Monitoring and maintenance of ground cover vegetation and other stabilised surfaces throughout operation to limit erosion and transport of sediment to watercourses. Implementation of procedures for hazardous material storage and spill management to be prepared and documented within the EMP.	8 (C;4)	Effectiveness will be measured as part of the erosion and sediment control plan and soil stripping and management plan.
	Inadequate availability of sufficient water for neighbouring properties during construction and operation of the project.	D	4	5	The project will not impact licensed water users. The water needs will either be met via bores (in accordance with harvestable rights provisions) or via town water. Water supply arrangements for the project will be the subject of further consultation with the project landholders, Dubbo Regional Council and the relevant agencies.	5 (D;4)	No action required.

Activity	Identified potential conflict	Probability (P)	Consequence (C)	Risk ranking	Management strategy (method of control)	Revised risk ranking (P;C)	Performance target
Local infrastructure and services	Inadequate availability of waste management facilities within the local community during construction and operations of the project	C	3	13	A construction waste and resource management plan will be prepared prior to commencement of construction. The plan will include appropriate consultation frameworks with Dubbo Regional Council and licensed waste management facilities to maintain communication and to facilitate effective forward planning to ensure that potential adverse impacts can be addressed.	5 (D;4)	The construction waste and resource management plan will include a grievance mechanism through which any identified adverse impacts can be addressed.
	Inadequate availability of existing services and infrastructure in the local community	C	4	8	Through the provision of additional economic stimulus, employment opportunities and benefits and investment in infrastructure and services, the net community benefit of the project is considered to be positive. AMPYR and/or its contractors will be encouraged to work with local employment, apprenticeship and training agencies to enhance the potential of hiring of local and regional workers thereby minimising the need to hire workers from outside of the local and regional areas and thereby minimise the potential for additional stress of services and local infrastructure.	8 (C;4)	Effectiveness will be measured as part of the CEMP.
Fire	Impacts on land surrounding the project from structural fires generated from within the development	C	3	13	Fire risk is considered in the preliminary hazard analysis (refer Appendix N of the EIS). The project is to be situated in a rural area and there is a large separation distance to the nearest residential dwelling, the effects are not expected to have an offsite impact. Plant and infrastructure will be outfitted with fire detection and supression equiptment and a fire management plan will detail measures and procedures to prevent fires igniting during the construction, operation and decommissioning of the project. A fire management plan (FMP) for the project will detail measures and procedures to prevent fires igniting during the construction, operation and decommissioning of the project. In addition, an emergency response plan (ERP) for the project will address potential fire events assocaited with electrical hazards.	9 (D;3)	The fire management plan will be reviewed after incidents of fire or as required. The FMP will be amended after the review process, if required, to increase the effectiveness of the FMP.
	Impacts on the operation of the project from external fires (eg bushfires)	C	3	13	Fire risk is considered in the preliminary hazard analysis (refer Appendix N of the EIS). The project is to be situated in a rural area and there is a large separation distance to the nearest residential dwelling, the effects are not expected to have an offsite impact. Plant and infrastructure will be outfitted with fire detection and supression equiptment and a fire management plan will detail measures and procedures to prevent fires igniting during the construction, operation and decommissioning of the project. A fire management plan (FMP) for the project will detail measures and procedures to prevent fires igniting during the construction, operation and decommissioning of the project. In addition, an emergency response plan (ERP) for the project will address potential fire events assocaited with electrical hazards.	9 (D;3)	The fire management plan will be reviewed after incidents of fire or as required. The FMP will be amended after the review process, if required, to increase the effectiveness of the FMP.

Probability	A	B	C	D	E
Consequence					
1	25	24	22	19	15
2	23	21	18	14	10
3	20	17	13	9	6
4	16	12	8	5	3
5	11	7	4	2	1

Level	Descriptor	Description
A	Almost certain	Common or repeating occurrence
B	Likely	Known to occur, or 'it has happened'
C	Possible	Could occur, or 'I've heard it happening'
D	Unlikely	Could occur in some circumstances, but not likely to occur
E	Rare	Practically impossible

Level	Descriptor	Comments
1	Severe	Severe and/or permanent damge to the environment; irreversible; severe impact on the community; neighbours are in prolonged dispute and legal action involved.
2	Major	Serious and/or long-term impact to the environment; long-term management implications; serious impact on the community; neighbours are in serious dispute.
3	Moderate	Moderate and/or medium-term impact to the environment and community; some ongoing management implications; neighbour disputes occur.
4	Minor	Minor and/or short-term impact to the environment and community; can be effectively managed as part of normal operations; infrequent disputes between neighbours.
5	Negligible	Very minor impact to the environment and community; can be effectively managed as part of normal operations; neighbour disputes unlikely.