Appendix M

Social Impact Assessment

Prepared for
Neoen Australia Pty Ltd
ABN: 57 160 905 706

Social Impact Assessment

08-Dec-2021
Great Western Battery

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Delivering a better world

Social Impact Assessment

Client: Neoen Australia Pty Ltd

ABN: 57 160 905 706

Prepared by

AECOM Australia Pty Ltd
Level 21, 420 George Street, Sydney NSW 2000, PO Box Q410, QVB Post Office NSW 1230, Australia
T +61 2 8008 1700 www.aecom.com
ABN 20 093 846 925

08-Dec-2021

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Abbreviations

Term	Meaning
ABS	Australian Bureau of Statistics
BESS	Battery energy storage system
DP	Deposited plan
DPE	NSW Department of Planning and Environment
EIS	Environmental Impact Statement
EMF	Electromagnetic field
EP&A Act	*Environmental Planning and Assessment Act 1979*
EPA	Environment Protection Authority
kV	Kilovolts
MW	Megawatt
MWh	Megawatt-hour
NEM	National Energy Market
ROL	Road Occupancy Licence
SA2	Statistical Area 2
SEARs	Secretary's Environmental Assessment Requirements
SIA	Social Impact Assessment
SSD	State Significant Development
TfNSW	Transport for NSW
TIA	Traffic Impact Assessment
TMP	Traffic Management Program

Definitions

Term	Meaning
Sensitive receivers	Persons, facilities, structures or organisms that are sensitive to potential noise, vibration, air and visual impacts, such as residents, schools, heritage structures and medical facilities.
Statistical Area Level 2	Statistical Area Level 2, defined by the ABS, are medium-sized general purpose areas built up from whole Statistical Areas Level 1. Their purpose is to represent a community that interacts together socially and economically.
Study Area	2 km radius from the Wallerawang town centre
The Project	The development of a battery energy storage system and adjoining transmission line
The Site	The location of the BESS at 173 Brays Lane, Wallerawang NSW, 2854 (part of Lot 4 DP 751651)

Executive Summary

Neoen Australia Pty Ltd (Neoen) is seeking development consent to construct, operate and maintain a battery energy storage system (BESS) of approximately 500 megawatts (MW) and approximately 1000 megawatt-hour (MWh). The BESS would be located at 173 Brays Lane, Wallerawang, NSW. The proposed transmission line would connect the BESS to the existing Transgrid 330 kilovolt (kV) substation at Wallerawang (the Project). The Project Area consists of the location where the BESS will be developed (known as the Site) and the transmission line corridor.

This social impact assessment (SIA) presents a qualitative assessment of the potential social impacts that may arise from the Project.

Study Area

The Study Area for the SIA has been defined using the Australian Bureau of Statistics (ABS) geographic boundaries of 'Statistical Area Level 2' (SA2). The following SA2s were chosen as they were overlapped with or were in close proximity to the Project Area:

- Lithgow Region
- Lithgow.

The Study Area for this SIA has been defined in recognition that the potential social impacts associated with the Project may exceed the geographical footprint of the Project Area.

The Study Area has rural, residential, industrial and agricultural character. The community living in the small rural town of Wallerawang has a strong connection to the Wallerawang Power Station and nearby mines as it had provided a livelihood through multiple generations.

Further details are provided in **Section 2.0** and **Section 3.0**.

Potential impacts

During construction the following social impacts have the potential to arise related to:

- Amenity (traffic and access, noise and vibration and air quality)
- Change to sense of place, health and wellbeing
- Business and economics
- Changes to local community connectivity (public transport, property and social infrastructure access)
- Cultural impacts
- Change in demographic profile
- Change in land use.

During operation the Project has the potential to affect the following social factors:

- Noise amenity
- Visual amenity
- Sense of place, health and wellbeing
- Business and economics
- Demographic profile and land use.

Further details are provided in **Section 4.0**.

Mitigation and management measures

The mitigation and management measures identified for this Project have been developed to enhance potential positive impacts where possible, and to address potential adverse impacts. The mitigation measures identified are detailed in **Section 5.0**.

The main methods of mitigation and management proposed are ongoing consultation between Neoen, the local council, the community and stakeholders, as well as the management of traffic impacts using a Traffic Management Plan and adhering to a Road Occupancy Licence throughout construction, giving receivers impacted by residual noise at-property treatment options and protection and the implementation of vegetation screening to minimise the visual impacts.

Conclusion

The SIA concludes that, with the implementation of appropriate mitigation measures, most potential adverse impacts of the Project would be short term, and be limited to a small area resulting in minimal disturbance of the community. Residual impacts during operation to nearby visual amenity and noise impacts are anticipated, these impacts would be of high-moderate negative significance on the limited number of local residents close to the Site. However, positive social impacts of the Project would provide a net benefit to the local and broader community as a result of:

- Opportunities for local employment and income during the construction phase
- Improving the security, resilience and sustainability of NSW's electricity grid with a cost effective, environmentally sensitive, and proven solution
- Contributing infrastructure that would directly support the NSW Government's commitment to facilitating, supporting and securing private investment in renewable energy developments
- Reducing the potential for future blackout or load shedding events that may occur as a result of an overburdened, underperforming network
- Providing electricity to the NEM during periods of high demand.

1.0 Introduction

1.1 Project overview

Neoen Australia Pty Ltd (Neoen) is seeking development consent to construct, operate and maintain a battery energy storage system (BESS) of approximately 500 megawatts (MW) and approximately 1000 megawatt-hour (MWh). The BESS would be located at 173 Brays Lane, Wallerawang, NSW. The proposed transmission line would connect the BESS to the existing Transgrid 330 kilovolt (kV) substation at Wallerawang (the Project).

Through the provision of a large-scale BESS, the Project would contribute to the delivery of electricity network system security, reliability and a stable energy supply through its ability to store power and consequently, provide input and output power upon demand.

In developing the Project, Neoen seek to deliver a large-scale BESS that would:

- Improve the security, resilience and sustainability of NSW's electricity grid with a cost effective, environmentally sensitive, and proven solution
- Contribute infrastructure that would directly support the NSW Government's commitment to facilitating, supporting and securing private investment in renewable energy developments
- Reduce the potential for future blackout or load shedding events that may occur as a result of an overburdened, underperforming network
- Provide electricity to the National Energy Market (NEM) during periods of high demand.

1.1.1 Elements of the Project

Key components of the Project are shown in **Figure 1-1** would include:

- Site establishment, including installation of fencing, environmental controls, earthworks and other civil works
- Establishment of a new driveway located at the southern boundary of the Site, providing access to the Site from Brays Lane
- Establishment of internal access roads and car parking
- Installation, commissioning, and operation of a large-scale BESS including battery enclosures, inverters, and transformers
- Construction of permanent operations buildings, including staff amenities
- Construction of lighting and installation of security devices such as fencing and sensor lighting around the perimeter of the BESS compound
- Establishment of noise walls, landscaping and screening vegetation
- Installation of the primarily underground transmission line connection from the BESS to the existing Transgrid Wallerawang 330 kV substation
- Minor upgrades to the Transgrid Wallerawang 330 kV substation.
- Following construction of the BESS it is proposed to subdivide Lot 4 DP 751651 to separate the existing residence in the south east portion of the lot and associate remaining lands from the proposed BESS.

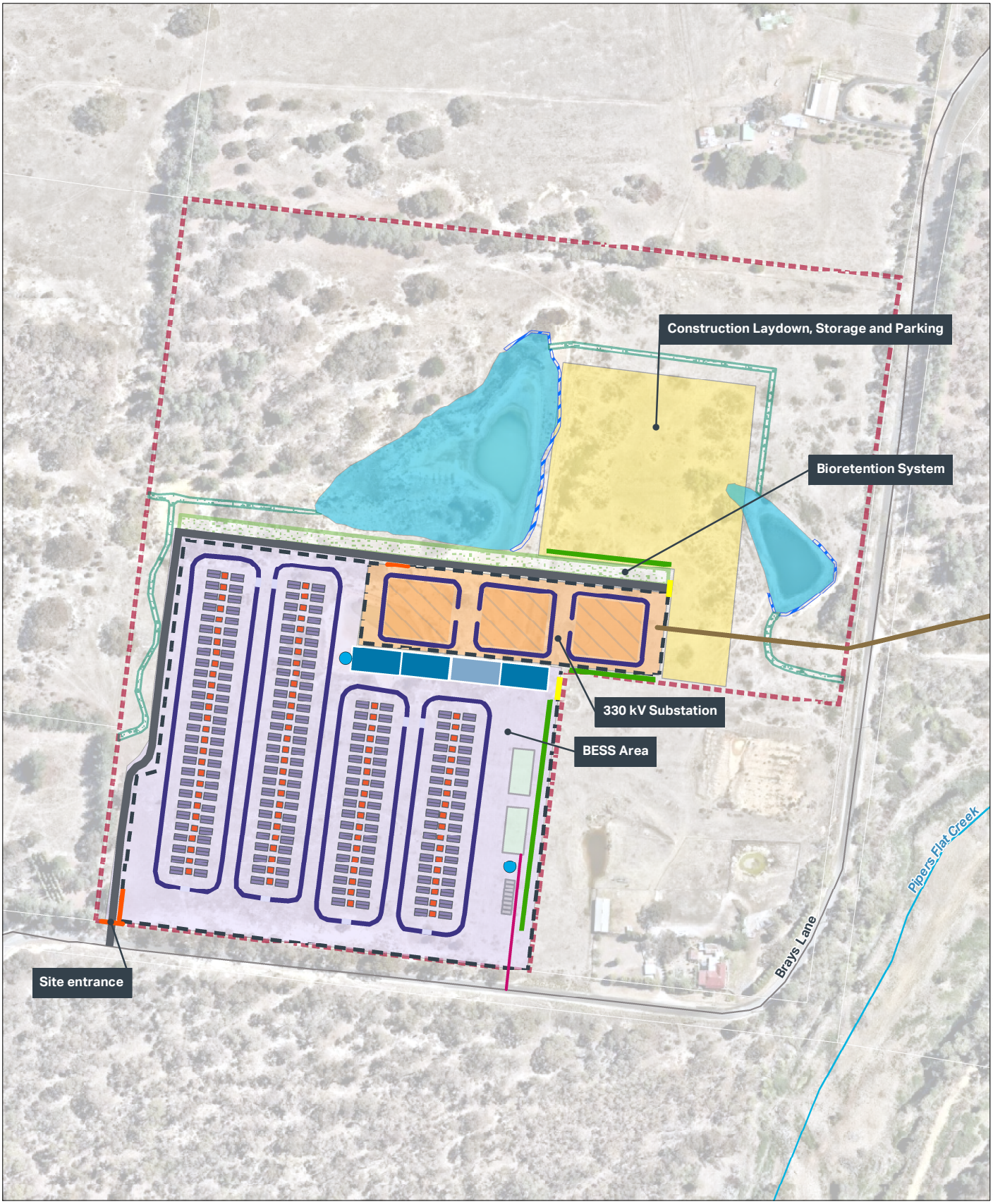

Figure 1-1

Indicative Layout of the Site

Legend

- The Site
- Substation
- Internal access road
- Noise wall
- Access Gate
- Security Fencing
- Water Connection Point
- Transmission Line Alignment
- Watercourse
- Local road
- Water Tank
- Large Transformers
- Battery and Inverter
- Transformers
- Bioretention System
- Dam Walls
- Swales
- 330 kV Substation
- Emergency exit
- Control Room
- Switch Rooms
- Landscape Planting
- O&M Building
- Carpark
- Approx Extent Of Dam Modification
- Construction Laydown, Storage And Parking
- BESS Area

N

0 30 60 m

AECOM

Source: Imagery © Nearmap, 2020.

1.1.2 Construction works

Construction works are as follows:

- Enabling works, such as site preparation, prefabrication, transportation of equipment and materials to Site and establishing a power connection (to generators).
- Civil, structural, mechanical and electrical works, including earthworks, installation of site drainage and noise walls, with the construction of the BESS and supporting structures (e.g. office building and associated amenities).
- Installation of proposed transmission line to connect the BESS to the Transgrid Wallerawang 330 kV substation approximately 1.25 kilometres away. The transmission line would be installed below ground using a combination of open trench and underboring methods. Underboring would be employed where required to avoid areas of sensitivity (such as Pipers Flat Creek, sensitive vegetation, areas of Aboriginal heritage sensitivity, and rail crossings).
- Commissioning to ensure the Project is operating safely and in accordance with quality and environmental management systems and processes.
- Finishes and demobilisation, such as landscaping and removal of construction equipment and facilities.

Further detail of the construction works are provided in **Chapter 4 Project Description** of the main EIS.

1.2 Secretary's Environmental Assessment Requirements

Table 1-1 sets out the Secretary's Environmental Assessment Requirements (SEARs) relevant to this SIA, and identifies where the requirements have been addressed in this report.

Table 1-1 SEARs for social impact

SEARs requirement	Where addressed
Socioeconomic – including an assessment of the likely impacts on the local community, any demands on Council infrastructure and a consideration of the construction workforce accommodation	• **Sections 4.0 and 5.0** assess the likely impacts on the local community during construction and operation • **Section 3.2.2** outlines the demands upon Council infrastructure whilst **Section 4.0** and **Section 5.0** assess the likely impacts on the Council infrastructure • Accommodation considerations are discussed in **Section 4.0** and **Section 5.0**.

2.0 Assessment methodology

2.1 Overview

The following steps have been taken to analyse the social impacts of the Project:

- Identification of relevant legislation, policies and guidelines
- Identifying the Study Area within which the Project may result in potential social impacts
- Identifying the social indicators with the potential for social change resulting from the Project
- Carrying out a desktop review of social indicators and other relevant data in order to create an understanding of the current demographic profile of the community
- Carrying out community and stakeholder engagement to seek feedback on community views and concerns
- Predicting and analysing the extent and nature of potential social impacts (both positive and negative) and evaluating their significance
- Preparation and consideration of appropriate avoidance, minimisation, mitigation and management measures to be employed to mitigate and manage potential social impacts of the Project
- Identification of residual and cumulative impacts of the Project.

2.2 Legislation, policies, and guidelines

2.2.1 NSW Environmental Planning and Assessment Act 1979 (EP&A Act)

The Project is considered State Significant Development (SSD) under *the Environmental Planning and Assessment Act 1979* (EP&A Act). This SIA has been prepared in accordance with the SEARs issued for the Project under Section 4.12(8) of the EP&A Act.

2.2.2 NSW Electricity Strategy

The NSW Electricity Strategy is the NSW Government's plan for a reliable, affordable and sustainable electricity future that supports a growing economy and population. The strategy will respond to these challenges and support a new affordable and reliable energy system that also contributes to the emissions reduction target.

The strategy aims to:

- Develop a reliable electricity infrastructure roadmap
- Save energy, particularly at times of peak demands
- Support the development of new electricity generators
- Set targets to bolster the state's energy resilience
- Make it easier to do energy business in NSW.

The Project would support and help realise the NSW Electricity Strategy by improving the security, resilience and sustainability of NSW's electricity grid with a cost effective, environmentally sensitive, and proven solution, thereby providing direct and indirect social and economic benefits to the State of NSW and locally.

Electricity Infrastructure Roadmap

The NSW Government plans to transform the current electricity system to a reliable, clean and affordable system through an Electricity Infrastructure Roadmap (Roadmap). The Roadmap has been enabled by the *Electricity Infrastructure Investment Act 2020* (NSW). The Roadmap coordinates investment in transmission, generation, storage and firming infrastructure as coal-fired generation plants retire.

The key Roadmap actions include:

- Renewable Energy Zones (REZ)
- Transmission development scheme
- Electricity Infrastructure Investment Safeguard
- Pumped Hydro Recoverable Grant Program
- Internationally competitive NSW industries.

The Project directly aligns with the Roadmap by helping to increase electricity supply reliability and thereby supporting a more stable electricity market and energy affordability, with greater capacity for renewable energy storage and input into the grid, which are consistent with the NSW Government's objectives of moving towards a decarbonised economy.

Renewable Energy Zone – Central-West Orana

REZs are modern-day power stations. They combine renewable energy generation such as wind and solar, storage such as batteries, and high-voltage poles and wires to distribute the energy.

REZs are beneficial as they:

- Provide a reliable source of energy
- Reduce electricity costs
- Reduce emissions
- Build community partnership though strategic planning, best practice engagement and benefit sharing.

Although the Project is outside of the Central-West Orana REZ geographical area, the Project would be contributing to and supporting the NEM, and helping to meet the objectives of the NSW Government's Electricity Strategy.

2.2.3 Lithgow Community Strategy Plan 2030

The Lithgow Community Strategic Plan 2030 considers the changing needs for the Lithgow LGA in five key themes that wholistically sets out the strategic plan for the community moving into the future. The themes are:

- Caring for the community
- Strengthening our economy
- Developing the build environment
- Enhancing the natural environment
- Responsible governance and civic leadership.

The Project would be generally consistent with the objectives of the plan by creating a resilient energy source, move towards a decarbonised economy, increasing local infrastructure and creating employment and business opportunities.

2.2.4 Central West and Orana Regional Plan 2036

The Central West and Orana Region is one of NSW's most diverse regional economies with strong connections to Sydney and a constant growth in capacity for freight and logistics infrastructure. The regional plan has set goals to ensure the social and economic wellbeing of the region's demographic, they are:

- The most diverse regional economy in NSW
- A stronger, healthier environment and diverse heritage
- Quality, freight, transport and infrastructure networks
- Dynamic, vibrant and healthy communities.

The Project contributes to the strengthening of community resilience consistent with the goals of the Central West and Orana Regional Plan 2036 of supporting a *diverse regional economy*, *high quality infrastructure networks*, and *dynamic communities*. By increasing energy storage capacity for renewable energy generation and helping to stabilise energy supply, the Project would increase resilience to natural hazards and climate change both at a local and strategic level. Through support from the government to transition away from mining, the Project has been able to diversify the local industry and become more resilient by supporting the demand for electrical services and would continue to support the transition to renewable energy.

2.3 Study Area

The scale of the Study Area for the Project has been selected based on its likely area of social influence and consideration of the broader, more regional-scale impacts. This aims to account for social aspects such as employment and other economic opportunities facilitated by the Project.

Specifically, the Study Area considers the following geographic areas, each defined by the Australian Bureau of Statistics (ABS) as a 'Statistical Area Level 2' (SA2):

- Lithgow Region SA2
- Lithgow SA2.

The geographic extent of the above SA2 areas (Study Area) is shown in **Figure 2-1**. The Project is located in the Lithgow Region SA2, though to more accurately outline the social environment of the area, the Lithgow SA2 has also been included.

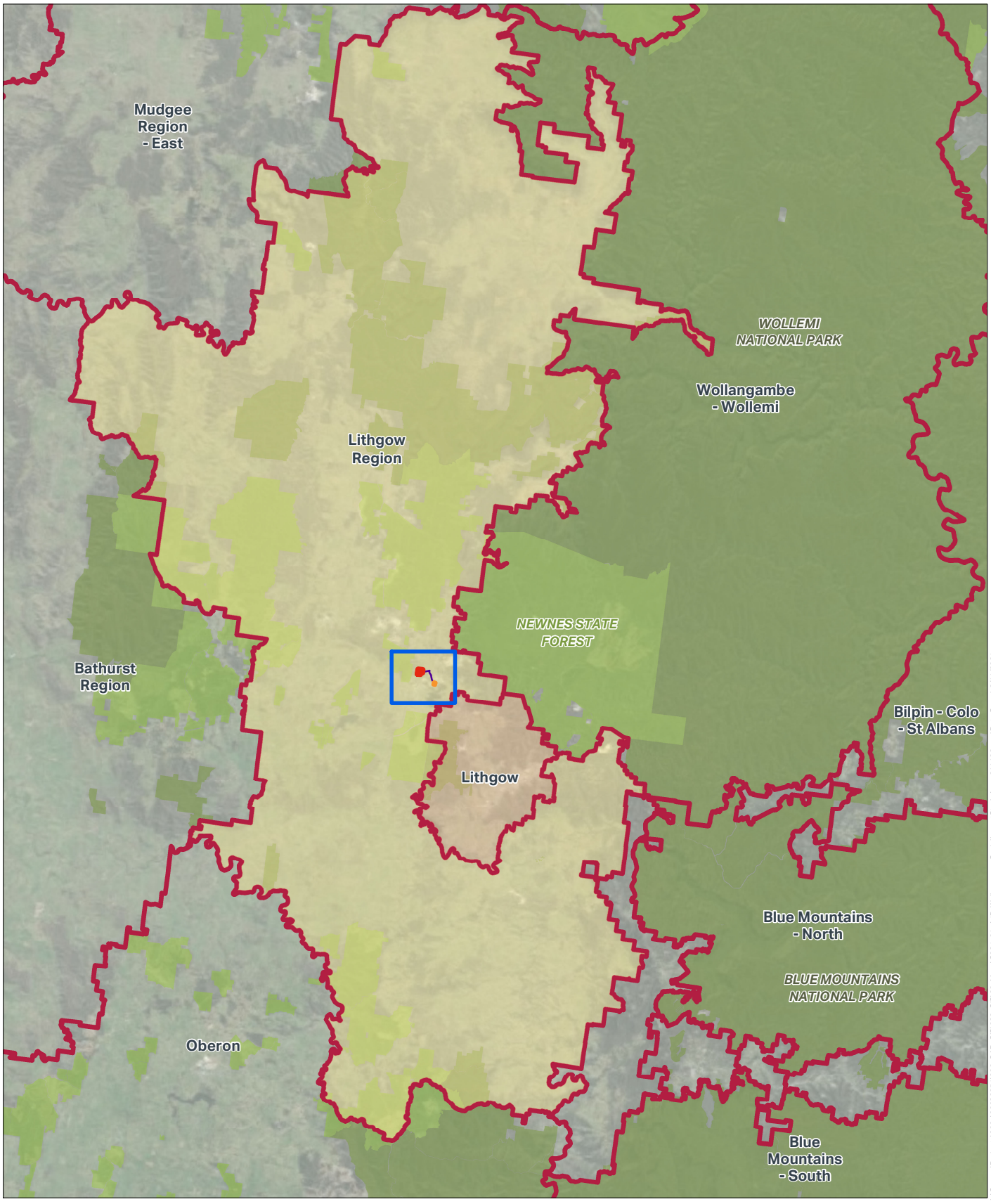

Figure 2-1

Social Impact Study Area

Legend

- Site boundary
- Transgrid Wallerawang 330 kV Substation
- Approximate Location of the Project Site
- Transmission Line
- State Forest
- NPWS Reserve
- Lithgow
- Lithgow Region

2.4 Methodology

2.4.1 Assessment inputs

To identify and evaluate potential social impacts of the Project, the following sources of information were considered and informed this SIA:

- Environmental scoping for the Project (refer to **Chapter 7 Environmental scoping**)
- Existing social conditions (based on land use information and data acquired from the ABS)
- Other technical impact assessments undertaken as part of the EIS (**Chapters 8** to **18** of the main EIS and relevant appendices)
- Community consultation and feedback on the Project (**Chapter 6 Stakeholder and community engagement**).

2.4.2 Identification of social indicators

Social indicators have been identified with reference to the potential of social change resulting from the Project. Regarding social issues in the Study Area, the following indicators have been identified:

- Local amenity, including traffic, access, noise and vibration, visual and air quality
- Property and land use within both the existing and future context
- A broad consideration of business impacts in the context of surrounding industry
- Community values, cohesion, sense of place, health and wellbeing.

2.4.3 Assessment of significance

Both positive and negative social impacts have been qualitatively analysed in this assessment. This assessment has employed a standardised matrix approach to the assessment of social impacts with consideration the potential **magnitude** of impact (effect on social environment) and the **sensitivity** level of the receiver (the community and economy of the local and regional area). The significance of each impact has been determined with reference to the definitions detailed in **Table 2-1** and **Table 2-2**. This assessment is based upon the degree and quality of available baseline data.

Table 2-1 Magnitude level definitions (TfNSW 2020)

Magnitude level	Meaning
Negligible	No discernible positive or negative changes caused by the impact. Changes from the baseline remains within the range commonly experienced by receptors.
Low	A discernible change from baseline conditions. The impact to a small proportion of receptors over a limited geographical area and mainly within the vicinity of the Project. The impact may be short term, or some impacts may extend over the life of the Project.
Moderate	A clearly noticeable difference from baseline conditions. The impact is to a small to large proportion of receptors and may be over an area beyond the vicinity of the Project. Duration may be short term to medium or some impacts may extend over the life of the Project.
High	A change that dominated over existing baseline conditions. The change is widespread or persists over many years or is effectively permanent.

The sensitivity of social and economic impacts affecting people refers to the susceptibility or vulnerability of people or receiving environments to changes caused by the impact, or the importance placed on the matter being affected. Findings on the sensitivity of affected people were based on their ability to adapt to change, their vulnerability, the level of concern raised in feedback during community and stakeholder consultation, or changes to the community's cohesion, way of life, health and wellbeing, culture and livelihood.

Table 2-2 Sensitivity definitions (TfNSW 2020)

Sensitivity	Meaning
Negligible	No vulnerability and able to absorb or adapt to change. Issues not raised in feedback during community and stakeholder consultation, or would not result in change to community cohesion, health, wellbeing and livelihoods.
Low	Minimal areas of vulnerabilities and a high ability to absorb or adapt to change. Issues rarely raised in feedback during community and stakeholder consultation, or minor change to community cohesion, health, wellbeing and livelihoods.
Moderate	A number of vulnerabilities but retains some ability to absorb or adapt to change. Issues raised in feedback during community and stakeholder consultation, or moderate change to community cohesion, health, wellbeing and livelihoods.
High	Multiple vulnerabilities and / or very little capacity to absorb or adapt to change. Issues raised in feedback from a number of community members and affected people during consultation or significant change to community cohesion, health, wellbeing and livelihoods.

The assessment matrix in **Table 2-3** has been used to determine the significance of each social impact as a function of the magnitude level and the sensitivity of sensitive receivers to the impact.

Table 2-3 Social impact significance matrix

		Magnitude level			
		Negligible	Low	Moderate	High
Sensitivity	Negligible	Negligible	Negligible	Negligible	Negligible
	Low	Negligible	Low	Moderate-Low	Moderate
	Moderate	Negligible	Moderate-Low	Moderate	High-Moderate
	High	Negligible	Moderate	High-Moderate	High

2.4.4 Stakeholder consultation

Neoen has carried out various consultation activities to inform the Project. Details of the engagement activities that have been carried out to date, and ongoing and planned consultation activities are in **Chapter 6 Stakeholder and community engagement**.

The key themes relevant to social impacts raised by stakeholders and community members across the consultation period included:

- Job impacts
- Visual impact
- Noise impacts.

The key themes raised are addressed in **Section 4.0** and **Section 5.0**. Overall the community feedback was largely positive to the introduction of the BESS (an associated infrastructure).

3.0 Existing environment

3.1 Socioeconomic profile

The demographic profiles of the Study Area were informed by the 2016 Census (ABS, 2021) (Note: the results of the 2021 Census is not due for release until June 2022). This forms the social baseline against which potential impacts of the Project were assessed. To provide context, the Study Area's data is compared to the whole of NSW. A detailed set of data tables are presented in **Appendix A**.

3.1.1 Population and demographic profile

Population

In 2016 population of the Lithgow Region SA2 (hereafter called Lithgow Region) was 8,262 with the Lithgow SA2 (hereafter called Lithgow) at 12,818. The combined population of the two SA2 regions is 21,080, making up 0.28% of the overall NSW population of 7,480,228 people.

Age

The median age of the Lithgow Region is 46, Lithgow's is 44. Both regions median age is higher than the state of NSW at 38. Younger aged groups (between 0 - 14 years) in the Lithgow Region area make up about 14.2% of the population, with older aged groups (over 65 years) making up 20.6% of the population. Younger aged groups (between 0 - 14 years) in Lithgow make up about 16.7% of the population, with older aged groups (over 65 years) comprising 22.8%.

In these same age groups, NSW recorded 18.5% of people between 0 - 14 years and 16.2% of people over 65 years (refer to **Table 7-1** in **Appendix A**).

Language

In 2016, 95.8% of the population within the Lithgow Region and 94.3% of Lithgow spoke English as the only language at home, compared to 73.5% in NSW (refer to **Table 7-1** in **Appendix A**).

Indigenous population

The Indigenous population in Lithgow Region is 5.0% and Lithgow is 6.2% (refer to **Table 7-1** in **Appendix A**). In NSW the proportion is 0.29%.

3.1.2 Employment and income

Employment status

In Lithgow Region, 56.3% of the workforce was employed full time in 2016, compared to 53.8% in Lithgow and 59.2% in NSW. Just over a third in Lithgow and Lithgow Region were employed part time (31.2% and 32.1% respectively), while NSW has 29.7%. The unemployment rate in Lithgow Region was 6.1%, while Lithgow was 8.6% and NSW at 6.3% (refer to **Table 7-2** in **Appendix A**).

Employment by industry sector

Approximately 11% of the jobs in Lithgow Region were within the health care and social assistance sector in 2016. Comparable figures for Lithgow and NSW are 12.3% and 12.49% respectively. The largest employers in the Study Area are in mining, accommodation and food services and public administration and safety industries (refer to **Table 7-3** in **Appendix A**).

3.2 Infrastructure

3.2.1 Social infrastructure

Social infrastructure refers to the facilities, structures and services that support the physical, social, cultural or intellectual development or welfare of the community. This includes a range of physical facilities such as schools, medical centres, sporting and recreational facilities (including passive open space), community facilities, libraries, and the activities and programs that operate within them.

Given the rural nature of the surrounding area, social infrastructure in the vicinity of the Site is limited, and as such a search radius of 2 kilometres from Wallerawang town centre has been used when considering social infrastructure facilities that may be affected in the area (shown in **Figure 3-1**). This figure also shows the Local Environmental Plan land use zones for the Study Area.

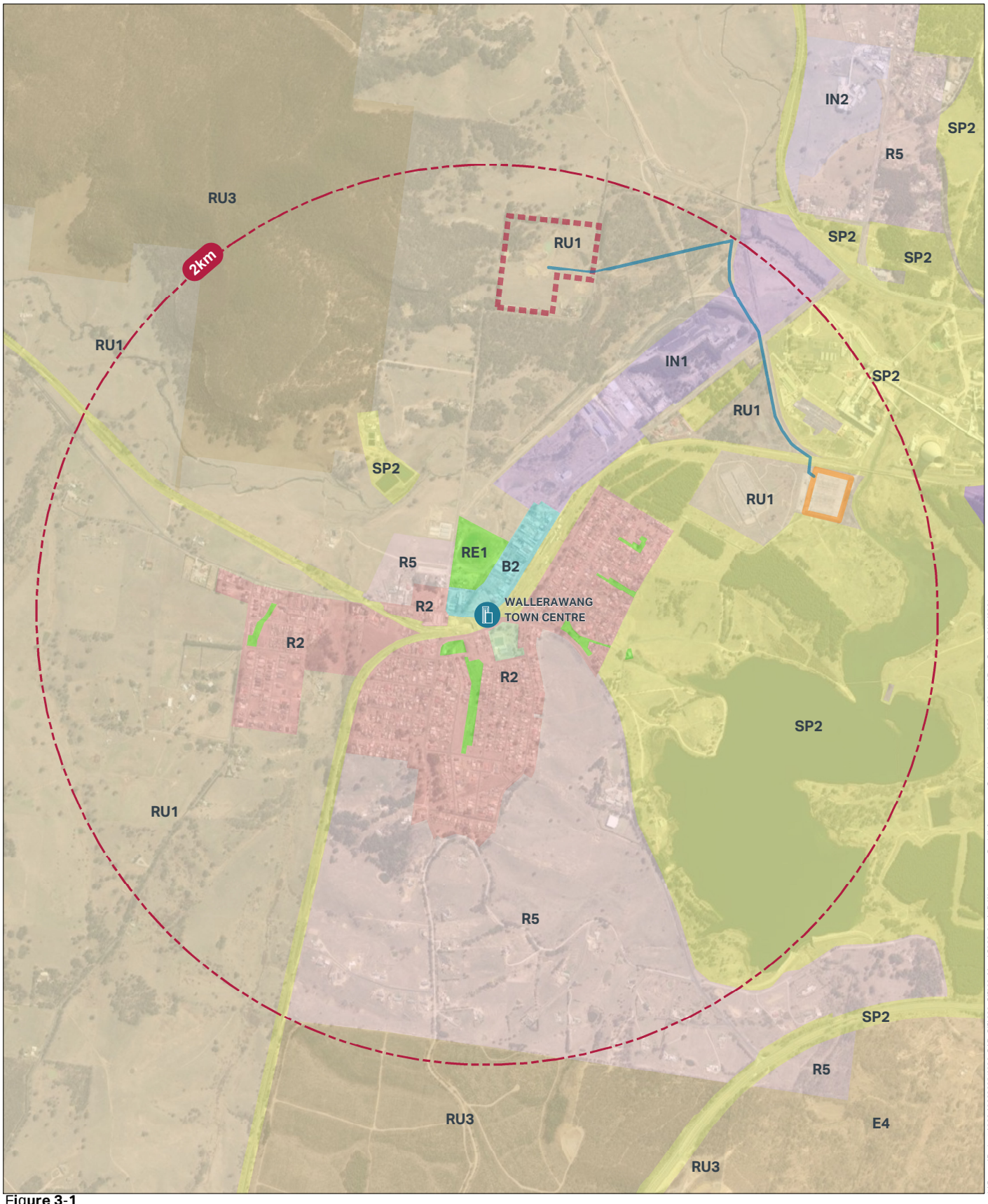

Figure 3-1

Areas of Relevant Social Infrastructure in Consideration of Social Impact

N 0 200 400 m

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Legend

- The Site
- Transgrid 330kV Wallerawang Substation
- 2km Buffer
- Transmission Line

LEP Land Zoning

- B2 Local Centre
- E4 Environmental Living
- IN1 General Industrial
- IN2 Light Industrial
- IN3 Heavy Industrial
- R2 Low Density Residential
- R5 Large Lot Residential
- RE1 Public Recreation
- RE2 Private Recreation
- RU1 Primary Production
- RU3 Forestry
- SP2 Infrastructure

The social infrastructure in the 2 kilometre radius of Wallerawang is listed in **Table 3-1**.

Table 3-1 Social infrastructure in Study Area

Social infrastructure	Facilities
Educational facilities	• Wallerawang Public School • Pied Piper Preschool
Health, medical and emergency services	• Central West Occupational Health & Rehabilitation Services • Dr S Kamalaharan & Associates
Places of worship	• St John the Evangelist Church • Church of the Sacred Heart
Sporting and recreational facilities	• Wallerawang Oval • Wallerawang Bowling Club
Local Centre	• Bakery • Butcher • Fuel station • Post office • City council • Retail • Restaurant • Hairdresser • Pharmacy • Grocer • Newsagent • Industrial businesses • Emergency Service Hubs
Accommodation	• Black Gold Motel • Royal Hotel • Commercial Hotel Wallerawang • Private short term accommodation (Airbnb)
Public transport	• Bus

The community members that utilise the social infrastructure may experience temporary access issues and traffic delays during the construction phase. This is discussed further in **Section 4.0**.

3.2.2 Council infrastructure

The likely demands on council infrastructure from the Project are outlined in **Table 3-2**.

Table 3-2 Demand on council infrastructure

Council infrastructure	Project's demand for council infrastructure
Potable water	A connection to Lithgow City Council's potable water supply would be established for operational use. Water used during construction would be transported to the Site until a connection to the potable water supply is established.
Roads	Roads would be utilised during construction to transport materials and the workforce to the Site. Vehicle routes from the Castlereagh Highway would be subject to a dilapidation survey prior to construction and (at a minimum) once construction is compete. This would seek to identify where the Project may have affected local roads and if any remedial action is required.
Sewage	The Project would not be connected to an existing sewer network. A holding tank would be installed to collect sewer waste at the Site during operation.

Council infrastructure	Project's demand for council infrastructure
Stormwater	No connection to an external stormwater system is required. Stormwater management measures are in place for run off / discharge into Pipers Flat Creek, discussed in **Chapter 11 Surface water, hydrology and flooding** of the main EIS.
Waste	During construction, the project has the potential to produce waste from a number of waste streams including: excess spoil; green / vegetation waste; packaging materials associated with items delivered to Site; sewage wastes; and general office and domestic wastes. A Construction Waste Management Plan would be implemented during construction and all waste generated during construction would be removed as required. It is not anticipated that construction waste management activities for the Project would pose a significant risk to the environment or human health. During operation, the BESS would be mostly unmanned and as such, waste would be limited to occasional maintenance waste and domestic waste from workers. This waste would be taken offsite by the workers.

Potential impacts on council infrastructure are discussed in **Section 4.0**. Overall impacts on council's infrastructure would be related to water and roads.

3.2.3 Property and land use

The Lithgow LEP governs land use within the Lithgow LGA. The land use zones that occur within the Project Area are shown on **Figure 3-1**. The Site is located in land zone RU1 primary production. The transmission line is crosses land zones of RU1 Primary production, IN1 General Industrial and SP2 Infrastructure (Rail Infrastructure Facility).

The area has rural, residential, industrial and agricultural character. With a number of industrial and extractive industry land use zones are present in the area surrounding the Site including Wallerawang Power Station, Springvale Colliery, Lidsdale Coal Loading Facility and Wallerawang Ash Repository.

The Project is a permissible development on the subject zonings as per the provisions of clause 34 of State Environmental Planning Policy (Infrastructure) 2007 and is consistent with existing land use in the area, which comprises a mix of rural and industrial land use. Refer to **Chapter 15 Land use** for further detail regarding the land use zones that occur within the Project Area.

4.0 Impact assessment

The impact assessment below summarises the predicted social impacts associated with the Project.

Stakeholder and community feedback have been reviewed and considered to provide insight to community perceptions, values and concerns in relation to social impacts. Values and sense of place derived from consultation periods have been specifically noted when reviewing the scope of impacts, as well as during assessment and mitigation.

The magnitude of anticipated impacts (both positive and negative) and the sensitivity of receptors likely to be affected by the Project are identified and assessed separately for construction and operation (**Section 4.1** and **4.2** respectively). All impact assessments have applied the matrix approach outlined in **Section 2.4**.

Residual and cumulative impacts have been presented in **Section 5.0**. Residual impacts of the Project are those that remain after mitigation measures are put in place. Cumulative impacts are considered in the context of other ongoing or planned developments likely to affect the same receivers as the Project.

4.1 Construction phase

This section outlines the potential social impacts that have been identified in the context of the social baseline discussed in **Section 3.0** as a result of the Project's construction.

Construction of the Project is intended to commence late 2022 and take approximately 12 months to complete.

4.1.1 Amenity impacts

The amenity and character of an area contributes to the community's shared identity and way of life. Amenity refers to the sounds, look and feel of a place and the activities that take place within it. Impacts or changes to amenity during construction can include any factor that impedes, alters, or enhances a resident or visitor's enjoyment of their home or daily activities. Examples include changes to noise levels, views, access to services, or changes to air quality.

The impact of the Project on relevant amenity factors has been considered below.

Traffic and access

Construction of the Project would introduce additional traffic volumes on local roads and may potentially affect travel times causing minor traffic disruptions and road safety. This may also disrupt residents and the community's ability to access their homes, workplace, local businesses and community facilities in the local area.

As outlined in **Chapter 14 Traffic and access**, it is expected that on average, construction of the Project would require up to 50 light vehicles, and 20 heavy vehicles per day. During the peak construction period lasting two months, up to 140 vehicle movements a day would be required.

Some short-term localised impacts have the potential to occur at the access to the Site off Brays Lane in the form of delays to road users. These potential impacts would be temporary and localised, and unlikely to result in any significant impacts due to the low levels of existing traffic on Brays Lane. Accesses, including the main access off Brays Lane, would be reviewed during subsequent design stages to ensure construction vehicles can safely enter the Site and turning paths can safely be accommodated on Site.

Trenching within the roadway corridors of Brays Lane (for potable water connection) and Main Street (for installation of the transmission line) would be required. This would require temporary lane closures and subsequent disruptions to traffic flows on these roads. Excavations across Brays Lane and Main Street would be undertaken in a manner to minimise traffic and access impacts, which would include, maintaining one lane for traffic flow in each direction during the works. In addition, installation for the transmission line would be undertaken progressively along the proposed alignment. As part of this, disturbed areas would be backfilled and rehabilitated as soon possible following the completion of works, to minimise the duration of access impacts in any one location. Should it be required, steel plates or similar would be installed over active trenches to allow for roads to remain operational where timely backfilling and rehabilitation is not practicable. The work related to the Project would be

undertaken as in accordance with a Road Occupancy Licence (ROL) issued by City of Lithgow City Council.

For the transmission line to connect to the Transgrid Wallerawang 330 kV substation, trenching and underboring activities are required in the rail corridor (SP2 Infrastructure (Rail Infrastructure Facility) land use classification shown in **Figure 3-1**). The 'railway infrastructure' is a country freight line, and trains would be infrequent. Construction within the rail corridor is not anticipated to cause disruptions to services, and the work undertaken would be subject to access conditions from TfNSW. Where the transmission line would be required to be installed within the existing road and rail corridors, it would be designed and in consultation with relevant authorities including TfNSW, and Lithgow City Council. In the case of unforeseen damage to existing infrastructure, these would be rehabilitated and repaired per requirements of the authorities.

There is a risk of construction vehicles interacting with pedestrians, cyclists and motorists on the road network surrounding the Site, including when construction vehicles are entering and exiting the Site. Potential impacts on road safety for all users during construction would be mitigated through the implementation of a Traffic Management Plan (TMP).

During construction, parking would be provided onsite for up to 50 light vehicles within the construction laydown and parking area. Overspill parking for workers would be provided at a location that would be determined in consultation with Lithgow City Council. The selection of this overflow parking site would seek to minimise local parking impacts to the community. Workers would be bussed from this parking overflow location to the Site. No parking of workers vehicles would occur in the local centre or along the verges of Brays Lane or the proposed transmission line corridor.

To address traffic and access impacts, all construction works would be managed in accordance with a TMP. This would be developed prior to construction as per the Traffic Impact Assessment (TIA) which is discussed further in **Chapter 14 Traffic and access**.

Based on the nature of the Project's likely traffic impacts, the magnitude of impact is considered to be low. The sensitivity of the receptors affected by the impact are considered to be low due to the low traffic volumes on local roads. As such the overall significance of impact would be a low negative impact.

Noise and vibration

Exposure to noise and vibration has the potential to create nuisance, intrude on daily activities or the enjoyment of activities, interfere with conversation and memory, disrupt sleep and rest patterns and create or exacerbate health concerns.

Sensitive receivers that may be affected by the noise and vibration as a result of construction works at the Site include up to four residential properties located to the east, west, north and southwest of the Site approximately 400 metres from the Site boundary. Reasonable and feasible mitigation measures would be implemented during construction to limit construction noise to nearby residents (refer to **Chapter 13 Noise and vibration** of the main EIS).

Standard construction hours are detailed with NSW Environment Protection Agency's (EPA) *Draft Construction Noise Guideline* (2020). These are:

- 7am to 6pm, Monday to Friday
- 8am to 1pm, Saturdays
- No work on Sundays or public holidays.

Some less noisy construction works may be undertaken on Saturday afternoon or earlier or later on Monday to Friday, however these works would be subject to agreement with DPE and would by their nature be quieter and unlikely to impact nearby residential receivers.

The transmission line would pass through land that that is primarily industrial. The only identified sensitive receiver around this corridor is the Church of Saint John the Evangelist, which is about 35 metres from the transmission line corridor. Noise impacts for any one receiver would be expected to decrease as construction progresses along the transmission corridor away from that receiver. In addition, the construction of the transmission line will utilise reasonable and feasible mitigation measures to minimise noise generation (refer to **Chapter 13 Noise and vibration** of the main EIS). As such, amenity impacts from construction noise would be temporary.

Given the distance from the works (approximately 30 metres), it is not expected that construction vibration would noticeably affect the amenity of receivers. Vibration impacts would be managed through the use of appropriate methods, and / or establishment of minimum work distances. Further information provided in **Chapter 13 Noise and vibration** of the main EIS.

Based on the nature of the noise and vibration impacts, the magnitude of impact is considered to be moderate. The sensitivity of the receptors affected by the impact are considered to be high (being residential properties and a place of worship). As such the overall significance of impact would be a high-moderate negative impact.

Visual

Construction of the Project would result in temporary visual impacts. The main receptors would be neighbouring residents who pass the Site and / or transmission line corridor or people who can see the Site from their neighbouring properties. The Site is well screened from the town of Wallerawang and therefore is unlikely to result in adverse impacts to residential properties further afield.

Visual impacts would arise primarily from the presence of construction activity, equipment, workers and plant / machinery. Whilst this would not necessarily prevent people carrying on their day to day activity it may affect their enjoyment of their private spaces and potentially lead to a degree of stress or anxiety.

This impact would be largely mitigated through appropriate controls such as hoarding to screen construction activity. Progressive rehabilitation of disturbed areas would also be implemented during construction, and construction areas would be maintained in a tidy condition throughout construction. Construction would not occur late into or through the night, and as such any need for night lighting would be limited and therefore would not affect night time amenity for receivers. Further information is provided in **Chapter 18 Other matters**.

Based on the nature of the visual impacts, the magnitude of impact is considered to be low. The sensitivity of the receptors affected by the impact are considered to be moderate. As such the overall significance of impact would be moderate-low negative impact.

Air quality

During construction, activities such as earthworks and the use of construction machinery have the capacity to generate dust and exhaust emissions. Nuisance dust has the potential to affect nearby residents and sensitive receivers, particularly those with respiratory illnesses, potentially increasing stress and anxiety. Receivers in close proximity to construction ancillary facilities are likely to be most affected by these impacts.

There are very few sensitive receivers that are likely to be affected by the change in air quality due to the low density of dwellings within the surrounding rural landscape, and their separation from the Site. The main dwellings in this area are very low-density single dwellings or homesteads, which are often setback some distance from the road, and often several hundred metres from the nearest neighbour.

There are two residential receivers at the Site, as well as St John the Evangelist Church along the transmission line which may be affected during construction. Standard mitigation measures would be implemented during construction including progressive rehabilitation, erosion and sedimentation controls, wetting of exposed surfaces, covering of loads and appropriate maintenance of construction vehicles and plant to reduce exhaust emissions. With the implementation of these measures it is considered that dust impacts and vehicle exhaust emissions from the construction of the Project can be appropriate managed such as to not significantly affect receiver amenity. Further information provided in **Chapter 18 Other matters**.

Based on the nature of the air quality impacts, the magnitude of impact is considered to be low. The sensitivity of the receptors affected by the impact are considered to be low. As such the overall significance of impact would be low negative impact.

4.1.2 Sense of place

The Lithgow Region and Lithgow are characterised by the dominant land uses of agriculture, industry, infrastructure, mining and some tourism. Wallerawang's community has a strong connection to the Wallerawang Power Station and nearby mines as it had provided a livelihood through multiple generations.

During construction there would be a change to amenities that could affect the sense of place in the local community. The increase in traffic and workers could lead to the perceived loss of the small

community feel of the town, leading to people not socialising or utilising social infrastructure. During installation of the transmission line under Main Street, the increase in noise and vibration, visible construction works and changes to air quality may affect the community's ability to carry out normal tasks or feel comfortable in their own town.

Traffic impacts to the town are expected to be minor as many of the construction workers are expected to access the Site via the Castlereagh Highway exist on to Brays Lane. In addition the area contains a number of existing and former industrial land uses which from time to time would have undertaken construction or maintenance works that increase the number of temporary workers active in and around the town of Wallerawang. As such the local community is unlikely to feel that the temporary increase in construction workers is a concern. Equally this issue has not been raised during community consultation.

Given the relatively stable residential population of the Study Area, it is possible that the temporary influx of workers would be perceived as a shift in the culture and demographic of the community through the introduction of new people. However, given the industrial nature of the area it is expected that the region would be accustomed to the arrival of construction and other temporary workers at various times.

The change in energy production from coal mining practices to renewable energy may be contentious as the production of non-renewable energy has been a part of the history of the Study Area. Nonetheless, the community response to the Project has been largely positive with an understanding that renewable energy is the way forward.

With respect to impacts on sense of place, the magnitude of impact is considered to be low. The sensitivity of the receptors affected by the impact are considered to be moderate (being community members). As such the overall significance of impact would be a moderate-low negative impact.

4.1.3 Economic impact

Construction activity can benefit the local economy with associated economic stimulus from increased expenditure at local businesses through purchases made by construction workers, and indirect employment and expenditure through the provision of goods and services required for construction.

Up to 250 construction workers would be required at the busiest peak of construction, for a period of about two months. Outside of this peak time (approximately ten months), an average of about 50 workers a day would be required. These workers would be preferentially sourced locally where appropriate skill sets are available.

Accommodation

Accommodation and hospitality services (food and accommodation services) are expected to get a short term influx in demand, creating a positive economic impact. A range of short-term visitor and tourist accommodation options are available within 20 kilometres of the Project Area to accommodate construction workers. Including hotels and motels, serviced apartments, tourist and caravan parks, cottages, bed and breakfasts and private accommodation (Airbnb). Some of the major accommodation providers in Wallerawang and the surrounding towns include the following:

- Black and Gold Motel
- Bowen Inn Motel
- Bushman's Motor Inn (30 rooms)
- Commercial Hotel Motel (16 motel rooms, an apartment and additional hotel rooms)
- Commercial Hotel Wallerawang (16 rooms and cabins)
- Coronation Hotel Portland (17 rooms)
- Lithgow Park Motor Inn
- Lithgow Valley Motel (18 units)
- Lithgow Workies Club Motel
- Royal Hotel (6 cabins and additional hotel rooms)

- Zig Zag Motel Lithgow

The number of rooms or units at each accommodation provider has been listed above, where known.

The local area has the accommodation capacity for the expected size of the work force throughout the construction period. It is noted that the highest demand for construction accommodation would be during a relatively short period of time (approximately two months) across the total construction period of twelve months. It is expected that the temporary accommodation demands of the Project would not place undue strain on accommodation in the area such as to affect the supply for other visitors to the area.

With respect to economic impacts, the magnitude of impact is considered to be moderate. The sensitivity of the receptors affected by the impact are considered to be low (being community members). As such the overall significance of impact would be a low-moderate positive impact.

4.1.4 Access and connectivity

Property access

During construction at the Site, the residents on the Lot will have full access to their dwellings and yards at all times. A separate entrance for construction traffic would be established in the south-west corner of the Site.

The construction of the transmission line is not anticipated to restrict access to any property.

As discussed above, all local road access would be maintained throughout construction as the works would take place progressively along the alignment.

Road, rail and public transport

Bus services in the Study Area are unlikely to be affected during construction. Bus services in Wallerawang would continue to operate as normal during construction and bus routes would not need to be diverted, as construction activities would be limited and temporary, with access still available along Main Street should construction of the transmission line require the road to be trenched. No changes to bus stop locations are anticipated as a result of the Project.

In addition, haulage of construction materials to the Project Area by rail would not be required for the construction of the Project. As such, no disruptions to rail services or network capacity are anticipated.

With respect to transport impacts, the magnitude of impacts are considered to be low. The sensitivity of the receptors affected by the impact are considered to be negligible. As such the overall significance of impact would be negligible impact.

4.1.5 Culture

Aboriginal heritage

The Project is part of a much larger cultural landscape for the Aboriginal community. This landscape includes a number of highly significant cultural sites and the Project has the potential to affect the current Aboriginal cultural value of the area.

Two Aboriginal archaeological sites have been found within the Project Area, comprising a subsurface artefact scatter and a subsurface stone quarry. The artefact scatter was assigned a low scientific value as it is regionally common. The stone quarry was assigned as having a moderate scientific value as they are rare on a regional scale. The overall significance of the Aboriginal cultural heritage value of the Project Area is considered low to moderate.

Proposed ground disturbance activities within the Project Area are anticipated to result in a near-complete loss of value for the stone quarry and no loss of value for artefact scatter. An Aboriginal Cultural Heritage Assessment Report was completed for the Project in consultation with registered aboriginal parties including with respect to the identification of mitigation and management measures. The assessment determined that there would be a low cultural heritage impacts from the Project because there will only be a loss of 0.02% of the regions potential Aboriginal archaeological resource. Further information available in **Chapter 9 Aboriginal heritage** of the main EIS. Overall the Project is unlikely to affect the current Aboriginal cultural value of the area.

Historic heritage

The history and heritage of an area can form the identity of the community who live amongst it. The Study Area has been heavily influenced and somewhat defined by the mining and industrial history.

There are a 11 historic heritage items in the Study Area; a detailed list is available in **Chapter 10 Historic heritage** of the EIS. There are no anticipated impacts from construction of the Site as there are no heritage listed items or archaeological sites within at least 700 metres.

St John the Evangelical Church is around 30 metres west of where the proposed transmission line will be constructed (refer to **Figure 3-1**). Protective measures, such as not using vibratory methods nearby, are proposed to would avoid impacts to the building.

Subject to the implementation of appropriate protective measures, construction of the BESS and proposed transmission line is not expected to have impacts to known or potential heritage or historical archaeological sites. Therefore no impacts to the historic heritage of the Study Area is anticipated.

With respect to cultural impacts, the magnitude of impact is considered to be low. The sensitivity of the receptors affected by the impact are considered to be low (as a loss of 0.02% of the regions potential Aboriginal archaeological resource is expected). As such the overall significance of impact would be a low negative impact.

4.1.6 Health and wellbeing

Impacts to the health and wellbeing of people who work, visit and live in the local area may arise from direct impacts and / or indirect impacts from construction. Direct impacts are changes to air quality and noise, whilst indirect impacts can be an increase in stress and anxiety associated with changes to amenity and temporary changes to demographic profile through the influx of construction workers.

Changes to amenity during construction may result in stress associated with loss of sleep (due to noise and vibration impacts) and decreased feelings of safety (associated with increased interactions between construction vehicles and pedestrians, and reduced sightlines as result of construction hoarding). The influx of construction workers and potentially anti-social behaviour could create a perceived increase in crime or perceived increase in job insecurity.

To address these potential impacts Neoen would maintain regular communication with Council, surrounding residents and stakeholders prior to and during construction to understand their concerns and identify measures that could be applied. Regular communication and access to relevant documents would allow residents to understand construction plans and therefore be better prepared for the temporary changes in the amenity of the area.

Based on the nature of the impacts on health and wellbeing, the magnitude of impact is considered to be low. The sensitivity of the receptors affected by the impact are considered to be low (given the industrial nature of the area). As such the overall significance of impact would be a low negative impact.

4.1.7 Changes to demographic profile

The Project would aim to source labour from the local area, but some labour is likely to be sourced from outside of the local area. This may result in a temporary change to the demographics of Wallerawang particularly during the peak of construction when it is anticipated that 250 workers would be required for two months. Outside this time only up to 50 workers would be required for the rest of the Project construction.

This influx of construction works would be temporary and whilst it may change the demographics during this time, this has not been raised as a concern during the community or stakeholder consultation undertaken to date. Given the temporary nature of the construction worker increase, the magnitude of impacts are considered to be low. The sensitivity of the receptors affected by the impact are considered to be negligible (given that this issue has not be raised to date). As such the overall significance of impact would be negligible.

4.1.8 Land use

A change in land use can affect the production or the utilisation of the land for its intended purpose.

The Project would involve construction work on part of Lot 4 DP 751651 (Lot 4). This lot is currently used as marginal and occasional grazing land. Construction of the Project would result in the loss of part of this grazing land for the landowners and / or their tenants. The landowners and tenants are the

only receivers that may be affected by the loss of this grazing land. As detailed in **Chapter 15 Land use** of the main EIS, land use impacts are likely to be negligible. Given the availability of grazing land in the wider area, the magnitude of impacts are considered to be low. The sensitivity of the receptors affected by the impact are considered to be negligible (given that they are selling the affected land for the Project). As such the overall significance of impact would be negligible.

4.1.9 Council infrastructure

During construction, impacts to council infrastructure may affect the wider community if a particular asset is unable to be used.

Where construction works are required within the road corridor, these would be agreed with Council in advance as part of any Road Opening Licence application and approval. Excavations would be undertaken in a manner to minimise traffic and access impacts, which would include, maintaining one lane for traffic flow in each direction during the works. In addition, a dilapidation survey prior to construction and (at a minimum) once construction is compete would be completed to help identify damage caused by Project traffic to local roads. This will help ensure that damage is identified and remedied if necessary.

With respect to council infrastructure, the magnitude of impacts are considered to be low. The sensitivity of the receptors affected by the impact are considered to be negligible. As such the overall significance of impact would be negligible impact.

4.2 Operational phase

The Project has an initial design life of 20 years with components anticipated to be replaced or upgraded, as required, with the potential to extend the life beyond 20 years.

The Project would operate 24 hours a day, 7 days a week. The Project is expected to undergo approximately one charge and discharge cycle per day, averaging 365 full cycles per year. Based on a 500 MW facility, the Project would have a charge and discharge cycle of up to 100 MW/h.

The Project would be an unmanned facility that is managed remotely. Between five to six employees would be required to attend the Site periodically for maintenance activities.

4.2.1 Amenity impacts

Traffic and access

There will be negligible traffic impacts associated with the Project during the operational phase. The Site will be managed remotely, and on the infrequent occasion where maintenance work is required a dedicated road and carpark on the Site would be available for workers. As such the Project would not result in any noticeable traffic generation or local parking impacts.

Noise and vibration

During operation, noise sources from the Project would include the batteries, inverters and transformers. To minimise noise emissions a 10 metre noise barrier with sound absorptive lining would be constructed around the battery packs and the high voltage transformers.

During the evening period (6pm to 10pm) and night time period (10pm to 7am) there are three residential receivers that are anticipated to experience noise levels that exceed the limits outlined in the *Noise Policy for Industry* (NPfI) (EPA, 2017). The exceedances vary from one to four decibels, therefore triggering the need for treatment methods for those affected. The impacts are considered ‘marginal’ and do not exceed the criteria for sleep disturbance. Further details provided in **Chapter 13 Noise and vibration** of the main EIS.

Treatment at each receptor location would be offered and discussed with affected receivers. Potential treatment options could be a mechanical ventilation and / or comfort conditioning systems. This would allow windows to be closed without compromising internal air quality / amenity. As the exceedance of the trigger levels is both during the evening and night-time periods, the treatment could apply to bedrooms and living rooms. If treatment were to be installed, it would be installed before the Project becomes operational.

Based on the nature of the noise and vibration impacts, the magnitude is considered to be low as there would be a change in baseline conditions to a small number of receivers close to the Project. The sensitivity of the receptors affected by the impact are considered to be moderate as the low existing noise levels provide some capacity to absorb and adapt to the change. As such the impact would be a moderate-low negative impact.

Visual

Development of the Project would change the current character of the Site from agricultural to electricity storage. This change is anticipated to be a low magnitude impact, as the surrounding landscape is already a mixture of industrial and rural land uses. During operation, the Project would be visible to a relatively small number of residences in close proximity to the Site. There are three neighbouring residents that may be affected visually (to a lesser or greater degree), which are located north, west and immediately east of the Site (the latter being the resident on the same Lot as the development).

The noise walls surrounding the battery enclosures and high voltage substations would be 10 metres tall. However many of the views to the BESS facility are obstructed or screened from these three properties due to the presence of vegetation or agricultural buildings. As such the magnitude of the change is likely to be reduced.

The design of the walls would be completed in consultation with the affected residents to mitigate concerns where possible. Existing vegetation screening would be maintained where practicable and additional screening established.

There would be negligible visual impacts during the night as there would no night lighting except for sensor security lighting associated with the control building and battery units.

The Project would be developed in an area with a mixed landscape character consisting of rural areas and numerous industrial elements associated with extractive industries and energy generation and transmission. The Project would be located in this wider environment but due to surrounding screening and the topography of the land would not be visible from areas distant from the Site.

The visual receptors close to the Site on the neighbouring properties would have full or partial views of the Project and particularly its larger components, particularly the noise walls and high voltage transformers. Screening will be maintained or included as part of the Project but some of these larger components may still be visible.

During operation the Project would be visible to passing vehicles on Brays Lane. However, traffic on this road is infrequent, with the visual sensitivity of the road users likely to be low due to the temporary, transient nature of the view. In addition, the Project would be located in an area which, while partially rural in nature, is also subject to views associated with the operation of numerous nearby heavy industries and would be consistent with this mixed visual character of the area.

There will be no changes to the visual viewshed or amenity of Wallerawang as the transmission line would be underground.

Given the rural and industrial character of the local area and the small number of sensitive visual receivers likely to be affected, the magnitude of the change is considered to be low or moderate. The sensitivity of the receptors affected by the impact are considered to be low and moderate as impacts would be limited those neighbouring the Site and in some cases existing screening already is present. As such the impact would be a moderate-low negative impact.

Air quality

There will be no air quality impacts from the Project during the operational phase.

4.2.2 Sense of place

Community members can lose a sense of connection to their home towns when the landscape around them is changing. This could result in stress, anxiety and potentially isolation.

The Project is located outside of the township of Wallerawang in a location that is physically and visually separate from the town and most of its community. Wallerawang has had a history of energy production and transmission through coal mining and the construction and operation of the Wallerawang Power Station. Use of the areas surrounding the town for energy storage is the evolution of the township and local region.

It is understood that community feel pride in the former Wallerawang Power Station; a place where many people previously worked. During the community consultation a question was asked whether the Project would result in Mount Piper Power Station retiring earlier. It is unlikely that the Project would mean Mount Piper Power Station would retire earlier as the focus on the Project is on capturing energy during periods of low demand and releasing it at high demand, whereas the viability of Mount Piper Power Station is on providing baseload electricity.

Community feedback has suggested broad support for the Project. The introduction of renewable energy into the Study Area may potentially bring a sense of pride, as the Project would also be supporting the wider electrical infrastructure across the region.

With respect to impacts on sense of place, the magnitude of impact is considered to be negligible. The sensitivity of the receptors affected by the impact are considered to be low. As such the overall significance of impact would be a low negative impact.

4.2.3 Health and wellbeing

The change in visual amenity, the ability to hear the residual noise from the BESS and the perception of harm from an EMF could lead to the feelings of anxiety and / or stress. The Project is located away from the wider township meaning that impacts are limited to sensitive receivers adjacent to the Project. Mitigation measures such as screening and at-receiver treatment options have been proposed to minimise these impacts and reduce community concern. The Australian Radiation Protection and Nuclear Safety Agency (ARPANSA 2021) states that there is no established scientific evidence that exposure to EMF causes adverse health effects. Additionally the exposure to EMF would be very limited as no receivers are within the EMF, further details in **Chapter 16 Hazard and risk**.

Physical distress can arise from noise impacts, as it could potentially prevent nearby residential receivers from sleeping, although sleep disturbance criteria for noise have not been exceeded. At-receiver treatment measures have been recommended and would be considered and discussed with affected receivers to further mitigate the predicted residual operational noise impacts from the Project (refer to **Chapter 13 Noise and vibration** of the main EIS).

With respect to impacts on health and wellbeing, the magnitude of impact is considered to be low. The sensitivity of the receptors affected by the impact are considered to be low. As such the overall significance of impact would be a low impact.

4.2.4 Business and economic impact

Businesses and the local economy have been supported by the government to diversify from a focus on mining with the Central West and Orana Regional Plan 2036. The Project would be able to diversify the local industry, and support a more resilient local economy by supporting new renewable projects across the Central West Orana Renewable Energy Zone.

4.2.5 Changes to demographic profile

The Project will have no effect on the Study Area's demographic profile once operational, as the Project would comprise an unmanned facility.

4.2.6 Land use

Once the BESS and associated infrastructure is operational, some of the land utilised by the Project during construction would be returned to the owner of Lot 4 (around nine hectares). The remaining seven hectares of land the Project occupies would form a new lot for DP 751651.

It is not expected that the loss of approximately seven hectares of grazing land to energy use would significantly affect the primary production capacity of the region.

4.2.7 Council infrastructure

The only demand on Lithgow City Council's infrastructure during operation is water. The demand on this service is anticipated to be quite low given the limited personnel onsite and the fact that the battery itself would not need any water inputs during operation.

5.0 Management and mitigation measures

5.1 Overview

This section describes the mitigation and management approaches for the social impacts that may occur during construction and operation of the Project. This section also includes the mitigation and management measures for the Project to manage amenity, economic, access and other impacts from construction and operational activities.

Mitigation measures identified in each of those respective sections are relevant to managing potential social and economic impacts, including, implementing a TMP, establishing noise walls, offering acoustic treatments to the three receivers where residual noise impacts are predicted, construction hoarding, and clear and frequent communication with all relevant stakeholders.

5.2 Performance outcomes

The social performance outcomes of the Project are as follows:

- adverse social and economic impacts are minimised through the implementation of standard and project specific reasonable and feasible mitigation measures as well as ongoing consultation with individual property owners and the community to document, address and develop strategies to address community concerns.

The Project would be designed, constructed and operated to achieve this performance outcome.

5.3 Mitigation and management measures

The impacts identified in **Section 4.0** of this report, and the mitigation and management measures that would be implemented to minimise the negative effects on the community during the construction and operational phases of the Project are summarised in **Table 5-1**.

Table 5-1 Mitigation and management measures

Ref	Identified impact	Mitigation and management measures	Timing	Residual impact
SI01	Traffic and access	Construction related traffic and access impacts would be mitigated through the implementation of a TMP and ROL which would outline the management techniques in which the least disturbance would occur to the community. Any damage to public infrastructure would be repaired and reinstated.	Construction	Temporary moderate-low (negative)
SI02	Noise and vibration	A Construction Noise and Vibration Management Plan would be put in place to minimise noise and vibration impacts throughout construction. Monitoring would be undertaken during activities that could exceed the highly noise effected criterion to manage noise and vibration impacts.	Construction	Temporary high-moderate (negative)
SI03	Visual	Hoarding would be used as needed to minimise visual impacts during construction.	Construction	Temporary moderate-low (negative)
SI04	Access to property	Access to properties including businesses and social infrastructure would be maintained throughout construction of the Project. Temporary measures such as traffic control would be used as needed to enable this to occur.	Construction	Negligible
SI05	Sense of place and health and wellbeing	A Community and Stakeholder Engagement Plan would be developed and implemented for the construction of the Project. This plan would detail the communication objectives of the plan and would outline how Neoen would consult and inform residences close to the Project and the wider Wallerawang community regarding key milestones or potential impacts related to the Project. The plan would describe where information of the Project is available, would contain a complaints management procedure and contact details for the person responsible for managing and resolving complaints.	Construction	Low (negative)
SI06	Noise and vibration	At the Site, noise walls will be established to reduce the impact to the two residential sensitive receivers nearby. In the case of residual exceedances above project trigger noise levels, at-receiver mitigation measures (ventilation treatments) will be offered to affected receivers.	Operation	Moderate-low (negative)
SI07	Visual	Operational noise walls would be sensitively designed to blend into the surrounding landscape where reasonable and feasible. Existing property boundary screening vegetation would be maintained as far as possible and additional planting would occur post construction to provide vegetation screening of the Site.	Operation	High-moderate (negative)

5.4 Residual impacts

Residual impacts of the Project are those that remain after mitigation measures are put in place.

The construction of the Project would result in a low level of adverse social impact post-mitigation. However there would be a moderate positive economic impact through the increased local demand for labour, hospitality, goods and services.

Noise and visual impacts to local sensitive receptors are likely to occur as a result of operation the Project, however the noise impacts are not likely to be significant and the visual impacts would be very localised to immediate neighbours. The Project could potentially indirectly support the diversification of the wider regional economy by supporting renewable energy projects across the Central West Orana Renewable Energy Zone.

Whilst some negative impacts are likely, these would be limited to sensitive receivers close to the Site. These impacts need to be balanced against the wider regional social benefits that the Project can bring by helping diversify the regional economy and supporting electrical infrastructure and generation projects and NSW Government strategies and goals. As such, the overall residual social impacts from the Project are anticipated to be of positive significance.

5.5 Cumulative impacts

Cumulative social impacts may arise from other projects occurring at the same time in the Study Area. The project that could cause a cumulative impact is the Wallerawang Battery Energy System project.

The Wallerawang Battery Energy System project, like the Great Western Battery (the Project), is proposing the construction of a large scale BESS and associated infrastructure, with a transmission line to connect to the Transgrid Wallerawang 330 kV substation. Due to the similarity in projects, it can be anticipated for it to have similar impacts as the Project.

Due to the location of the two sites being opposite sides of the Transgrid Wallerawang 330 kV substation, there is likely to only be one cumulative social impact that may arise, namely traffic, as it may create delays and access issues during construction which could create feeling of stress and anxiety within the community. Further information is provided in **Chapter 19 Cumulative impacts**.

6.0 Conclusion

This SIA considers the context of the Project and identifies social impacts that are likely to arise as a result of its construction and operation.

The key themes raised from the community consultation related to social impacts are as follows:

- Job impacts
- Visual impact
- Noise impacts.

Key potential social benefits of the Project would include:

- Opportunities for local employment and income
- Improve the security, resilience and sustainability of NSW's electricity grid with a cost effective, environmentally sensitive, and proven solution
- Contribute infrastructure that would directly support the NSW Government's commitment to facilitating, supporting and securing private investment in renewable energy developments.
- Reduce the potential for future blackout or load shedding events that may occur as a result of an overburdened, underperforming network
- Provide electricity to the NEM during periods of high demand.

In summary the potential social impacts that would be minimised by implementing mitigation measures identified in this SIA that are relevant to the following issues:

- Traffic and access
- Noise and vibration
- Visual
- Air quality
- Sense of place
- Access to property
- Health and wellbeing.

These impacts would be managed and minimised through the implementation of appropriate management and mitigation measures as identified in **Section 5.0**.

Continual monitoring and management of concerns would be assessed throughout the construction and operation of the Project to monitor and manage short and long term impacts on the community. Frequent construction updates will be provided though the Project's website (www.greatwesternbattery.com.au). If there are queries or complaints that need to be raised, a dedicated email address, as well as a dedicated phone number will be put into place, that any member of the community will be able to utilise, and ensures continued community engagement and that potential social impacts are addressed and managed effectively.

7.0 References

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Appendix A

Socioeconomic data tables

Table 7-1 Key demographic characteristics of the Study Area and all of NSW in 2016 (ABS 2021)

Key demographic	Lithgow Region SA2	Lithgow SA2	NSW
Statistics	2016	2016	2016
Median age	45.8	43.1	38
Total Resident Population (no. persons)	8,262	12,818	7,480,228
Population aged <15 (no. persons)	1,173	2,146	1,386,330
%^	14.20%	16.74%	18.53%
Population aged 15+ (no. persons)	7,089	10,672	6,093,914
%^	85.80%	83.26%	81.46%
Population aged 65+ (no. persons)	1,702	2933	1,217,646
%^	20.60%	22.88%	16.27%
Indigenous population (no. persons)	414	793	216,176
%^	5.0%	6.2%	2.9%
Speaks a language other than English at home (no. persons)	1638	305	735,563
%^	4.2%	5.7%	26.5%

Percentages may not add to 100% due to rounding
^percentage of total resident population for each geographical location

Table 7-2 2016 Labour force characteristics (ABS 2021)

Key demographic	Lithgow Region SA2	Lithgow SA2	NSW
Statistics	2016	2016	2016
Total Labour Force	3,504	4,946	3,605,872
Employed full time (FT)	1,970	2,660	2,134,521
%^	56.3%	53.8%	59.2%
Employed part time (PT)	1,091	1,587	1,071,151
%^	31.2%	32.1%	29.7%
Employed away from work*	214	277	174,654
%^	6.1%	5.6%	4.8%
Unemployed	225	423	225,546
%^	6.1%	8.6%	6.3%
Median weekly household income	$1,123	$919	$1,486

*Employed full time or part time, but away from work at the time of the 2016 Census
^percentage of total labour force for each geographical location

Table 7-3 Employment by industry in 2016 (ABS 2021)

Industry	Lithgow Region SA2		Lithgow SA2		NSW	
	No. persons	%	No. persons	%	No. persons	%
Agriculture, Forestry and Fishing	95	5.9%	68	0.5%	72 625	2.15%
Mining	309	8.6%	438	9.1%	31 736	0.94%
Manufacturing	218	4.7%	340	5.7%	197 331	5.84%
Electricity, Gas, Water and Waste Services	111	4.1%	128	3.3%	31 881	0.94%
Construction	351	7.2%	368	6.2%	282 491	8.36%
Wholesale Trade	121	2%	240	2.3%	103 722	3.07%
Retail Trade	372	8%	663	11%	326 396	9.66%
Accommodation and Food Services	440	8.3%	728	9.5%	239 222	7.08%
Transport, Postal and Warehousing	205	4.8%	262	4.6%	158 760	4.70%
Information Media and Telecommunications	38	0.9%	37	0.7%	73 398	2.17%
Financial and Insurance Services	181	2.2%	292	2.1%	167 259	4.95%
Rental, Hiring and Real Estate Services	125	1.5%	134	1.2%	59 652	1.76%
Professional, Scientific and Technical Services	202	3%	239	2.9%	274 078	8.11%
Administrative and Support Services	267	3.3%	386	3.5%	117 482	3.48%
Public Administration and Safety	501	9.5%	658	9.6%	204 173	6.04%
Education and Training	365	6.5%	473	6.4%	282 568	8.36%
Health Care and Social Assistance	479	10.6%	770	12%	422 195	12.49%
Arts and Recreation Services	45	1.2%	62	1%	51 775	1.53%
Other Services	152	3.4%	201	4.2%	124 477	3.68%
Inadequately described / Not stated	233	3.8%	266	4.3%	159 108	4.71%
Total (no of people)	**4 810**	**-**	**6 753**	**-**	**3 380 332**	**-**

Percentages may not add to 100% due to rounding