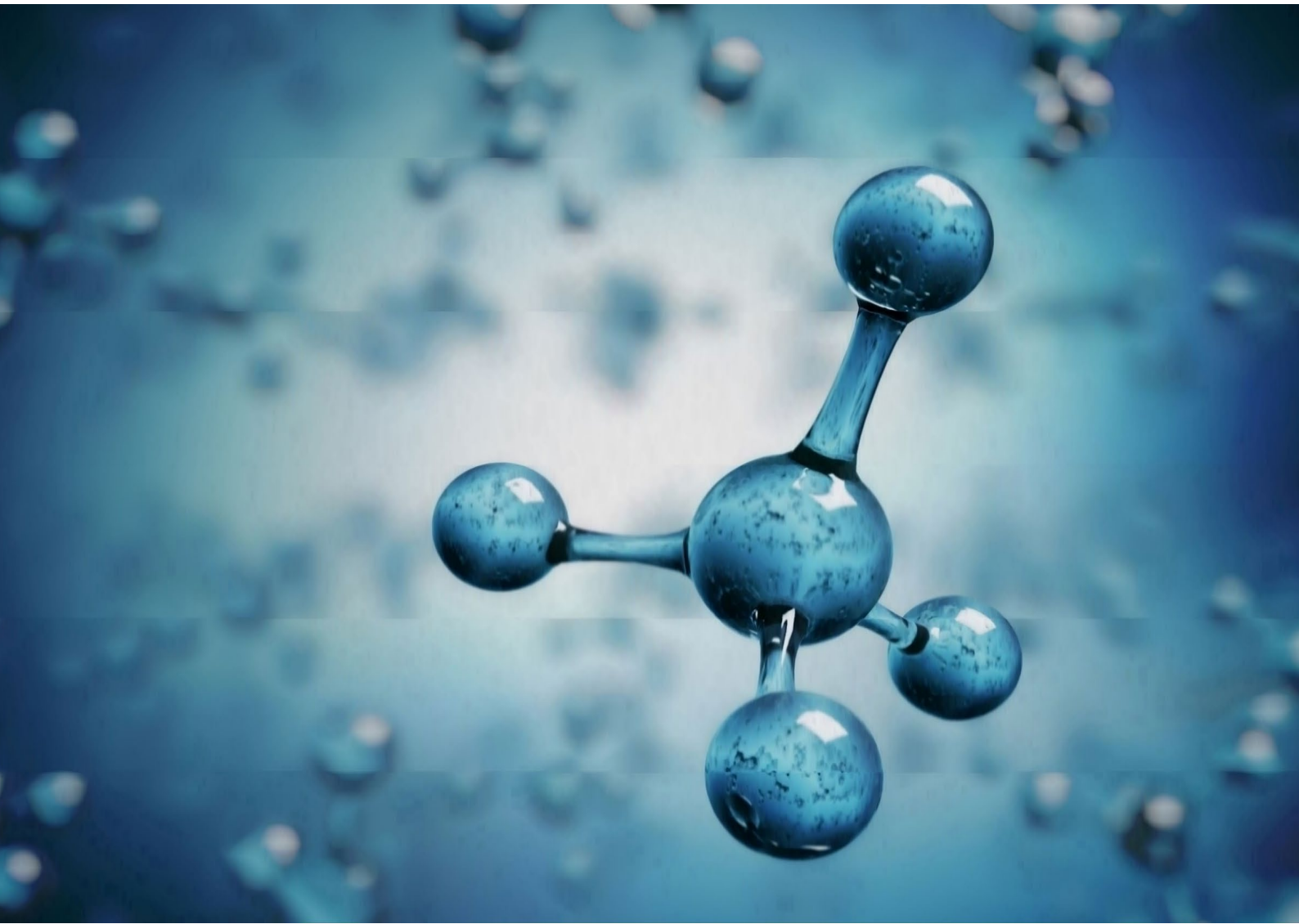
Lucas Heights Bioenergy Facility

Social Impact Assessment

LMS Energy Pty Ltd

October 2025

→ The Power of Commitment



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Acknowledgement of Country

GHD acknowledges Aboriginal and Torres Strait Islander peoples as the Traditional Custodians of the land, water and sky throughout Australia on which we do business. We recognise their strength, diversity, resilience and deep connections to Country. We pay our respects to Elders of the past, present and future, as they hold the memories, knowledges and spirit of Australia. GHD is committed to learning from Aboriginal and Torres Strait Islander peoples in the work we do.

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Glossary

Abbreviation	Meaning
ABS	Australian Bureau of Statistics
ANSTO	Australian Nuclear Science and Technology Organisation
CCS	Community Consultation Strategy
CEMP	Construction environmental management plan
CRG	Community Reference Group
CSEP	Community and Stakeholder Engagement Plan
CTPMP	Construction Traffic and Pedestrian Management Plan
DPIE	Department of Planning, Industry and Environment (currently DPHI)
DPHI	Department of Planning, Housing and Infrastructure (NSW)
EIS	Environmental impact statement
EP&A Act	*Environmental Planning and Assessment Act 1979 (*NSW)
FTE	Full time equivalent
GSCA	Gandangara State Conservation Area
GSP	Gross State Product
IRSAD	Index of Relative Socio-Economic Advantage and Disadvantage
km	Kilometres
LEP	Local Environmental Plan
LGA	Local Government Area
LHRRP	Lucas Heights Resource Recovery Park
NSW	New South Wales
m	Metres
OEMP	Operations Environmental Management Plan
PCYC	Police Citizens Youth Club
PHA	Preliminary Hazard Assessment
SAL	Suburb and Locality
SEARs	Secretary's Environmental Assessment Requirements
SEPP	State Environment Planning Policy
SSC	Sutherland Shire Council
SSD	State Significant Development
The project	The installation of a new bioenergy facility at the Lucas Heights Resource Recovery Park (LHRRP) to replace the existing power station.
The proponent	LMS Energy Pty Ltd

1. Introduction

1.1 Project overview

LMS Energy Pty Ltd ("LMS Energy") proposes to provide an upgrade to the landfill biogas management infrastructure at the Lucas Heights Resource Recovery Park (LHRRP) through the installation of a new bioenergy facility to produce renewable energy from landfill biogas generated at the LHRRP (the project).

The new bioenergy facility would be a like for like replacement of the existing power station, with improvements that comply with modern standards and regulations and forecasted biogas generation capacity requirements. The project ensures appropriate capacity to manage forecast peak recoverable biogas and renewable energy generation would effectively continue through the remaining landfilling and post closure periods for the landfill.

The regional context of the project and project site and surrounding land uses are shown in Figure 1.1 and Figure 1.2.

Recoverable landfill biogas from the LHRRP is forecasted to reach peak levels of approximately 13,000 m3/hour over the next five years. Biogas generation will continue for decades following the closure of LHRRP, necessitating long-term management solutions.

This project is designed to address two key requirements:

– Providing a modern version of the existing power station to meet contemporary operational standards and regulatory compliance requirements.
– Ensuring the facility can accommodate the forecast future landfill biogas volumes**,** supporting efficient and sustainable energy recovery.

The development has an estimated cost greater than $30 million and is declared State Significant Development (SSD) in accordance with clause 20 of Schedule 1 of State Environmental Planning Policy (Planning Systems) 2021 (Planning Systems SEPP).

1.2 Purpose of this report

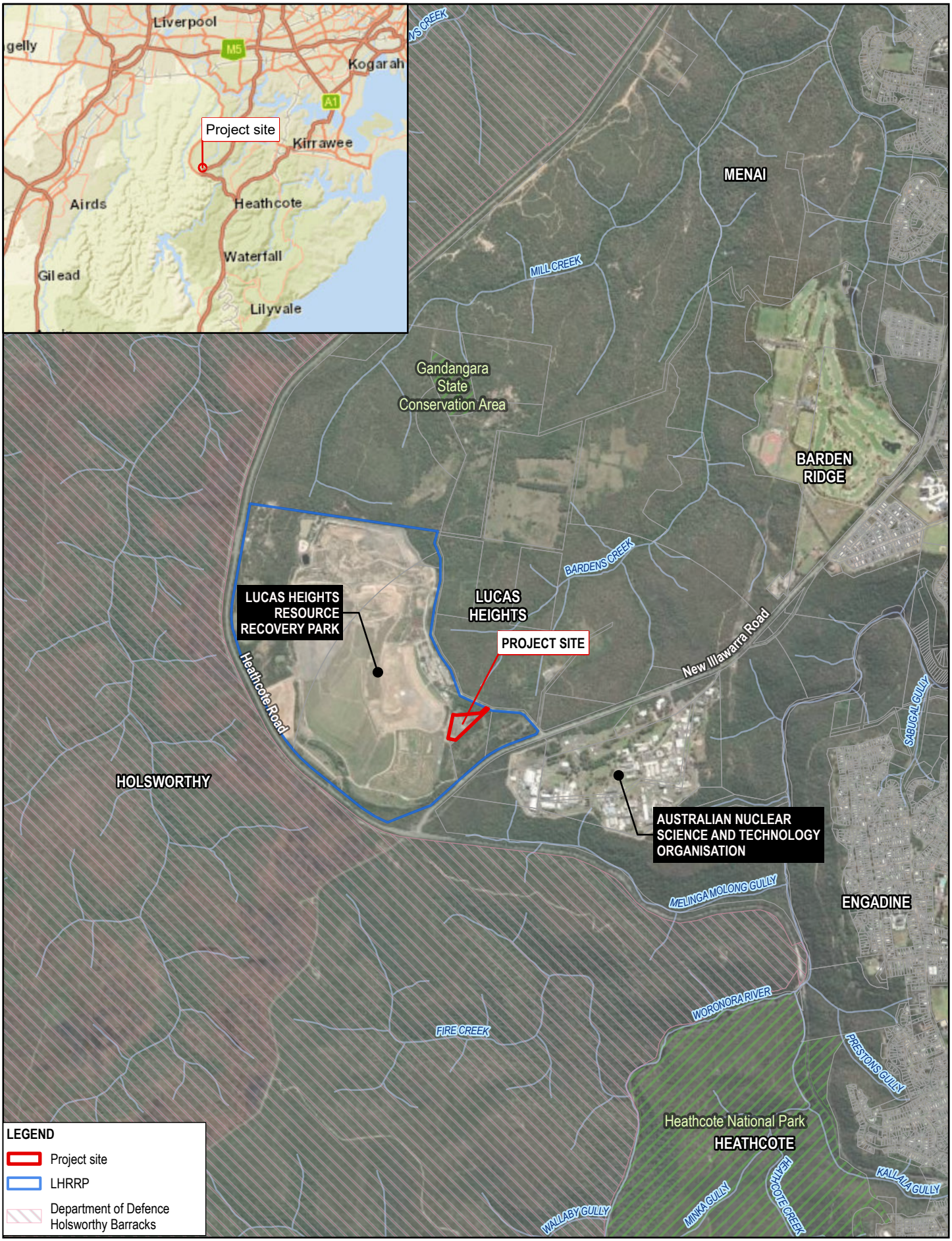
GHD Pty Ltd (GHD) has prepared this Social Impact Assessment (SIA) to support the Environmental Impact Statement (EIS) for the project. This report addresses the Secretary's Environmental Assessment Requirements (SEARs) issued on 06 March 2025 and assesses the social impacts associated with the construction and operation of the project.

Specifically, this report:

– has been prepared in line with the NSW Department of Planning, Industry and Environment's (DPIE) *Social Impact Assessment Guideline* (2023) (hereafter referred to as 'the SIA Guideline') (DPHI, 2025a).
– addresses the SEARs as listed in Table 1.1
– describes the existing social environment.
– assesses the potential impacts of constructing and operating the project on the existing social environment
– recommends measures to mitigate and manage the impacts identified.

Table 1.1 SEARS relevant to this social impact assessment

Requirements	Where addressed in this report
Social – including a social impact assessment prepared in accordance with the Department's Social Impact Assessment Guideline.	This report presents a social impact assessment which has been prepared in line with the requirements of the NSW SIA Guideline (DPHI, 2025b). The assessment of social impacts is presented in section 6.



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Metres

Map Projection: Transverse Mercator
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Grid: GDA 1994 MGA Zone 56

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Regional context

Project No. **12649882**
Revision No. **0**
Date **17/09/2025**

FIGURE 1.1

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Map Projection: Transverse Mercator
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Project site and surrounding land use

Project No. **12649882**
Revision No. **0**
Date **16/09/2025**

FIGURE 1.2

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Data source: GHD: Site Boundary (2025), Site Features (2025). NSWSS: SVTM (2025), NPWSR (2025), Cadastre (2025). Nearmap WMS Server: .
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1.3 Description of the project

Key features of the project outlined in the EIS are provided in Table 1.2.

Table 1.2 Key features of the project

Project element	Summary
Project application area	The project application area encompasses Lot 102 DP1009354 (existing power station site) and is a 1.8 ha site located within the existing LHRRP footprint.
Output capacity	20 x 1.1 MW modular lean burn generator sets to provide a total output of approximately 22 MW.
Proposed built infrastructure	– Modular lean burn generator sets – Ancillary infrastructure including: • condensate knockout system • transformers to increase the electrical output voltage to be compatible with the local grid • electricity and gas metering, protection, and communication equipment • covered bunded bulk oil and coolant storage • high voltage switchroom / control room • staff facilities, such as lunchroom, car parking, and restrooms.
Hours of operation	– 6am to 6pm for operational staff – Remote operation 24 hours per day, 7 days per week outside of operational hours.

1.3.1 Related development

LMS has modified SSD 6835 under section 4.55(1a) of the *Environmental Planning and Assessment Act 1979* (EP&A Act) for installation of an enclosed flare system to meet the full biogas recovery capacity at the LHRRP (Modification 3).

The flare facility will provide a contingency as required during commissioning, maintenance and shutdown of the proposed bioenergy facility to maintain consistent biogas combustion rates to support the operation of the existing landfill at LHRRP. It will also ensure continued landfill gas combustion during the transition between commissioning of the new generators and decommissioning of the old generators.

The existing power station would not operate following the commissioning of the new bioenergy facility and is not considered a source of cumulative impacts.

1.3.2 Construction

Construction of the project would commence in the first quarter of 2026 (Q1), with an estimated duration of 6-8 months (weather permitting and subject to planning approval). Construction activities include site establishment, mobilisation and structure installations, and testing and commissioning. Key construction details are provided below in Table .

Table 1.3 Key construction information related to the social impact assessment

Construction phase information	Details
Commencement date	– Q1 2026
Construction period	– 6-8 months
Construction activities	– Minor civil works – Construction of concrete pad – Trenching and backfilling – Hot work activities (i.e. grinding and welding)
Construction hours	– Monday to Friday: 7am to 5pm – Saturday to Sunday: 8am to 5pm.

Construction phase information	Details
Construction workforce	Up to 15 FTE workers
Construction traffic	– 10 heavy vehicle movements per day – 30 light vehicle movements per day. Traffic movements associated with construction would peak at the above maximums, but these volumes would not be sustained for the entire construction period.

Construction phase information relevant to the timing, type, duration and magnitude of social impacts has informed both the scoping of social impacts (section 5) and impact assessment (section 6).

1.3.3 Operation

Twenty 1.1 MW modular lean burn generator sets are proposed within the bioenergy facility. Ancillary infrastructure includes filtration and condensate knockout system, transformers, metering and protection equipment, bulk storage, high voltage switch room, and staff facilities, which were not deemed to generate social impacts. Key operation details are provided in 1.4.

Table 1.4 Key operation information related to the social impact assessment

Operation phase information	Details
Commencement date	Q4 2026
Number of structures	Modular lean burn generators: 20 units Lightning poles: 5 units
Structure heights	Modular lean burn generators: 10.2 metres (m) Lightning poles: approx. 20 m
Design features	Fully insulated custom designed generator enclosures Stainless steel stacks located on top of the modules
Operational workforce	6 FTE workers
Operational lifespan	25 to 30 years

Operation phase information relevant to the timing, type, duration and magnitude of social impacts has informed the scoping of social impacts (Section 5) and impact assessment (Section 6).

1.3.4 Post closure decommissioning

The bioenergy facility is designed to remain operational after landfilling activities are expected to cease at the LHRRP around 2037 to the early 2040s. Landfills continue to generate residual gas for decades after closure, and the facility would play a critical role in capturing and utilising this gas to minimise emissions and produce renewable energy. Operations would continue for as long as landfill gas is available, with the facility expected to have a lifespan of 25 to 30 years.

Once the facility reaches the end of its operational life, the proponent would evaluate whether to reinvest in the project to extend its lifespan or proceed with decommissioning. This decision would be based on commercial and environmental factors, including the availability of landfill gas and the feasibility of ongoing operations.

The modular design of the facility is such that individual generator modules can be progressively decommissioned, allowing continued operation of the facility in line with the rate of gas production at the site over time.

1.4 Structure of this report

The structure of this SIA is outlined below:

– Section 1 – introduces the report and includes a description of the project.
– Section 2 – describes the methodology for the assessment.
– Section 3 – describes the legislative and policy context relevant to this SIA for the project.
– Section 4 – describes the stakeholder consultation undertaken for the project.
– Section 5 – describes the existing social environment for the project site.
– Section 6 – identifies the potential social impacts arising from the construction and operation of the project.
– Section 7 – outlines recommended impact management and mitigation measures.
– Section 8 – provides a conclusion for the report.
– Section 9 – provides a list of references used for this report.

1.5 Authors of this report

The SIA Guideline requires a suitably qualified and experienced practitioner/s to be involved in the preparation of the SIA report (DPHI, 2025a). The personnel involved in the preparation of this SIA and their respective qualifications area provided in Table 1.5.

Table 1.5 Authors and qualifications

Name	Position	Project role	Qualifications	Professional memberships	Years experience
Hilton Penfold	Senior consultant -Social Sustainability and Engagement	Lead Author	– B Human Geography – PhD Human Geography	International Association for Public Participation	7+
Imogen Jones	Social Sustainability Consultant	Support Author	– B Regional and Town Planning		2+

I, Lauren Harding declare that the *Lucas Heights Bioenergy Facility Social Impact Assessment* contains all information relevant to the SIA for the project and that the information is not false or misleading. The assessment was completed on 5th of June 2025:

_____

Lauren Harding

1.6 Scope and limitations

This report has been prepared by GHD for LMS Energy Australia for the purpose agreed between GHD and LMS Energy Australia as set out in section 1.2 of this report.

GHD otherwise disclaims responsibility to any person other than LMS Energy Australia arising in connection with this report. GHD also excludes implied warranties and conditions, to the extent legally permissible.

The services undertaken by GHD in connection with preparing this report were limited to those specifically detailed in the report and are subject to the scope limitations set out in the report.

The opinions, conclusions and any recommendations in this report are based on conditions encountered and information reviewed at the date of preparation of the report. GHD has no responsibility or obligation to update this report to account for events or changes occurring subsequent to the date that the report was prepared.

The opinions, conclusions and any recommendations in this report are based on assumptions made by GHD described in this report. GHD disclaims liability arising from any of the assumptions being incorrect.

2. Methodology

This section describes the methodology followed to prepare this SIA. Overall, the methodology has been prepared to respond to the SEARs, with the SIA process guided by the following guidelines:

- SIA Guideline (DPHI, 2025a)
- *Technical Supplement – Social Impact Assessment Guideline for State Significant Projects* – hereafter referred to as the 'SIA Technical Supplement' (DPHI, 2025b)
- International Association for Impact Assessment *International Principles for Social Impact Assessment* (Vanclay et al., 2003) and *Social Impact Assessment: Guidance for assessing and managing the social impacts of projects* (Vanclay et al., 2015).

The SIA Guideline has a set of review questions to confirm that the requirements of the guideline have been met when considering the social impacts of a project. A response to the review questions is provided in Appendix A.

In the context of this SIA, social impacts are understood as the consequences that people and communities experience as a result of project-induced changes that affect the way they 'live, work, play, relate to one another, organise to meet their needs and generally cope as members of society' (Burdge & Vanclay, 1996).

As outlined in the SIA Guideline, social impacts can involve changes to one or more of the following social values:

- **Way of life**, including how people live, how they get around, how they work, how they play, and how they interact each day.
- **Community**, including composition, cohesion, character, how the community functions, resilience, and people's sense of place.
- **Accessibility**, including how people access and use infrastructure, services and facilities, whether provided by a public, private or not-for-profit organisation.
- **Culture**, both Aboriginal and non-Aboriginal, including shared beliefs, customs, practices, obligations, values and stories, and connections to Country, land, waterways, places and buildings.
- **Health and wellbeing**, including physical and mental health especially for people vulnerable to social exclusion or substantial change, psychological stress resulting from financial or other pressures, access to open space and effects on public health.
- **Surroundings**, including ecosystem services such as shade, pollution control, erosion control, public safety and security, access to and use of the natural and built environment, and aesthetic value and amenity.
- **Livelihoods**, including people's capacity to sustain themselves through employment or business.
- **Decision-making systems**, including the extent to which people can have a say in decisions that affect their lives, and have access to complaint, remedy and grievance mechanisms.

A social impact can be direct, indirect or cumulative, and negative or positive. It can also vary according to the individual, community, or segment of a community by whom it is experienced.

The term 'community' refers to a network of people and/or organisations who are linked together by a web of personal relationships; cultural and political connections, shared identities and traditions, similar socioeconomic conditions, or common understandings and interests (Vanclay et al., 2015). In the context of this SIA, the term 'community' is used to refer to people residing in a shared discrete geographic location - for example, a rural town or regional centre. However, in select cases, it may also be used to describe a 'community of identity' or a 'community of interest'.

The following sections describe the steps undertaken to prepare the SIA.

2.1 Scoping potential impacts

As per the SIA Guidelines (DPHI, 2025a) a social impact scoping exercise was undertaken in support of the EIS Scoping Report (GHD, 2025e). The purpose of the SIA scoping exercise was to undertake a preliminary assessment of the potential social impacts and benefits that may occur as a result of the project. The scoping process was undertaken to help focus the assessment, identify the potential social values that may experience change, the areas the SIA will focus on, and the level of assessment for potential social impacts.

The potential social impacts and benefits that may result from construction and operation of the project were identified through a review of the information presented in the Scoping Report, the understanding of the social locality, and based on previous professional experience undertaking social impact assessments for state significant projects in NSW. The potential social impacts have been evaluated according to the characteristics of magnitude as defined in DPE's Social Impact Assessment Guideline (DPHI, 2025a). The outcomes of the social impact scoping process are summarised below.

Construction of the project may result in in the following impacts for the community:

– Minor and temporary changes to local amenity (e.g. noise, vibration, and visual changes) for people located close to construction activities.
– Since the nearest residences are more than two kilometres away, and the site is accessed via major rather than local roads, impacts of construction on local residents are expected to be minimal.
– The project would provide some local employment opportunities during construction.

Operation of the project may result in the following impacts for the community:

– concern from local communities about perceived and actual air quality impacts due to operation of the facility
– changes to local amenity (e.g. noise, vibration, air emissions) during operation for people within proximity to the facility.

In addition to the scoping report, further scoping was conducted to gather additional information, which allowed for a more refined understanding of the potential social impacts. The scoping exercise was informed by:

– A review of background information provided by LMS Energy, including a description of the project, details of proposed use of the area, and other studies undertaken for the project (project information relevant to the scoping of impacts are outlined in Table 1.3 and Table 1.4).
– Outcomes from key stakeholder consultation activities (outlined in section 4).
– Understanding of the social baseline for the study area (further described in section 2.3).
– The findings of other technical studies prepared for the EIS (listed in section 2.5).

The key themes and socio-economic impacts (positive and negative) considered through the scoping exercise are detailed in Table 2.1.

Table 2.1 Scoping themes

Social impact theme	Description
Local amenity	Impacts may include dust, noise and vibration associated with construction activities, such as earthworks, use of heavy vehicles, which have potential to affect local businesses and recreational groups. Operational impacts may include changes to visual landscape, noise and vibration and air quality, which are expected to have limited potential to alter local amenity due to the project's containment within the LHRRP site.
Access and connectivity	Impacts may include increased traffic congestion and road safety concerns along New Illawarra Rd, Little Forest Rd and Heathcote Rd, which may lead to frustration for road users and affect the way that people move between places and interact. There are no local residential access roads directly connected to the project site.
Economy, business and employment	Impacts may include limited economic benefits workers and businesses within the local and regional economy. The project may provide a small number of local employment and procurement opportunities during construction and operation depending on the presence, availability and capacity of both specialised and general construction workers and contractors to meet project demands.
Community health and wellbeing	Impacts on community health and safety include potential for impacts related to construction risks and operational failures of the project. These impacts could affect the physical and mental health and wellbeing, and safety of nearby stakeholders, notably recreational users surrounding the project site, people using and accessing the current LHRRP site and users of the future recreational parkland proposed following the closure of LHRRP operations.

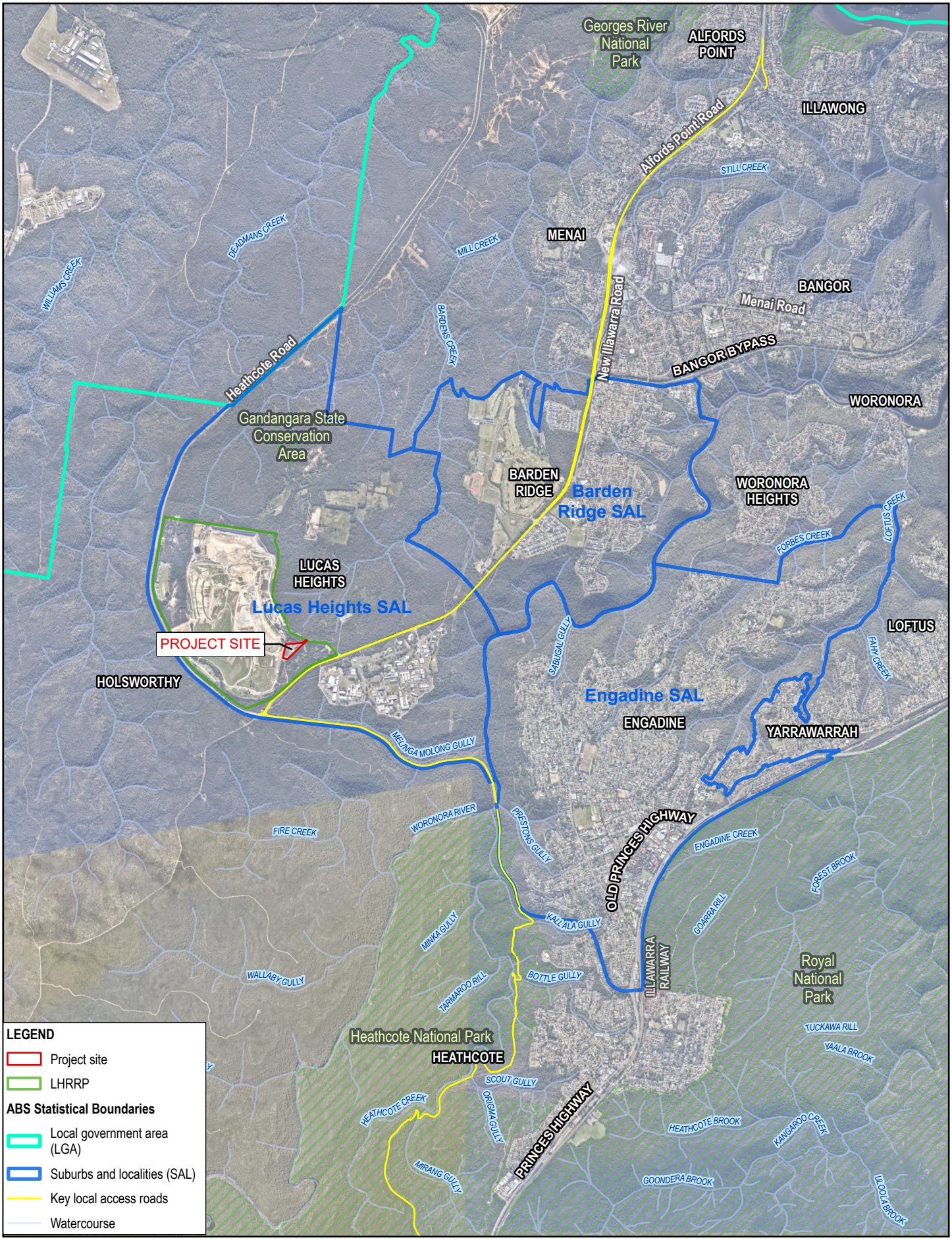
2.2 Defining the social locality

The social locality is the geographical area of social influence of an existing operation or a proposed development. For the purpose of this study, the social locality includes the people and communities most likely to experience changes to existing socio-economic conditions resulting from the project. The social locality includes a local and

regional study area, as outlined in Table 2.2 and shown in Figure 2.1. The distances provided in Table 2.2 are approximations that are based on the boundaries shown in Figure 1.2.

Table 2.2 Social locality

Social locality study area	Description	Relevant statistical area
Local study area	The local study area includes: – The suburb of Lucas Heights contains the project site and is comprised of recreational and special use zoned areas containing local business and recreational areas. Local businesses nearest to the project site include the LHRRP containing the project site and Australian Nuclear Science and Technology Organisation (ANSTO) campus 500 m from the project site. The LHRRP waste disposal fee booth is regularly staffed and is located 170 m from the project. Recreational groups temporarily use land 300 m south within the LHRRP (Sutherland PCYC Minibike Club), and mountain bike trails about 500 metres to the north (Mill Creek Trail Association) and a new carpark to service the mountain bike trails located 250 m east of the site. – The suburb of Holsworthy is located directly to the west of the project site and is comprised of dense bushland and the Holsworthy Barracks, an Australian Department of Defence site. The nearest built-up area for the Holsworthy Barracks and the project site are separated by approximately 1.3 km of the LHRRP brownfield site, Heathcote Rd and 3.5 km of bushland. – The suburb of Engadine is located east of the project site and is separated by the built-up area containing ANSTOs campus and 900 m of bushland. The suburb of Engadine has a residential population. The closest residence to the project site is located 2 km in a straight line from the project site, however by road these residences are 11 km via New Illawarra, Heathcote Rd, the Princes Hwy and various local access roads that will not be affected by the project. – The suburb of Barden Ridge is located north east of the project site, which contains the nearest residential area by road, which is a 3.9 km drive via New Illawarra Road and Old Illawarra Road. In a straight line, the nearest residential area in Barden Ridge is 2 km. Residents within the local study area may potentially experience direct and indirect social impacts and benefits due to construction and operation of the project.	Lucas Heights Suburb and Locality (SAL), Engadine SAL and Barden Ridge SAL.
Regional study area	The regional study area includes: – Sutherland local government area (LGA) contains the local study area suburbs (Lucas heights, Engadine and Barden Ridge). – The Project is within Sydney significant urban area (SUA), which will likely support the workforce and procurement requirements of the project. Non-local workers will likely live within a commutable distance from the project and not require workforce accommodation. The Sydney SUA and NSW have also been used as a regional benchmark, where relevant.	Sutherland Shire LGA
Transport and access routes	The primary access roads for the project would be New Illawarra Rd, which is a two-lane carriageway and a gazetted State road managed by Transport for NSW. New Illawarra Rd connects to the project site via Little Forest Rd. Little Forest Rd is a two-way sealed local access road used primarily by workers of the LHRRP and public and commercial users of the waste disposal facilities and mountain bike trail users. local access roads in the Barden Ridge and Engadine do not directly connect to the project site, but do connect to the main access roads	Lucas Heights SAL and Barten Ridge SAL.



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Metres

Map Projection: Transverse Mercator
Horizontal Datum: GDA 1994
Grid: GDA 1994 MGA Zone 56

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Lucas Heights Bioenergy Facility Project

Project No. **12649882**
Revision No. **0**
Date **15/09/2025**

Social locality

FIGURE 2.1

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Data source: LPMA: DTDB/DCDB, 2019. Nearmap WMS Server:
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2.3 Establishing the social baseline

The social baseline establishes the current social characteristics within the social locality for the SIA. The social baseline is used to inform the prediction of the potential social benefits and impacts of the project. A social baseline has been prepared for the project site, local study area and regional study area, as shown in Table 2.3.

Table 2.3 Social baseline topics and indicators

Area	Description of topics and indicators
Project site	– Existing land use. – Access roads – Key natural features.
Local study area	– Local amenity and character of the area. – Select demographic and economic indicators for the residential suburbs of Barden Ridge and Engadine. – Key features – Main access routes.
Regional study area	– Location, history and character of the area. – Community values and priorities. – Values and interest of local Aboriginal communities. – Economic overview. – Community facilities and services. – Accommodation and housing.

Data to inform the social baseline has been gathered from the following sources:

– Australian Bureau of Statistics (ABS), 2021 Census (ABS, 2022) and 2016 Census (ABS, 2017)
– NSW Government population projections (NSW Government, 2025)
– Economic data (e.g., economy.id)
– Local, State and Australian Government websites and publications
– Various research reports (detailed in section 9)
– Various online sources (detailed in section 9)
– Information from EIS and SIA consultation (refer to section 4).

A full list of sources used to inform this SIA is provided in section 9. The demographic data has been analysed by undertaking a trend analysis of 2016 and 2021 ABS census data (ABS, 2016; ABS, 2021) and comparative spatial analysis of the local and regional study areas in relation to NSW averages.

2.4 Stakeholder consultation

The SIA has been informed by various community and stakeholder engagement activities. These include consultation activities undertaken to inform the EIS for the project, and stakeholder interviews undertaken by the SIA team.

EIS stakeholder engagement commenced in October 2024 and will continue throughout the EIS development phase, in line with the *Undertaking Engagement Guidelines for State Significant Projects* guideline (DPHI, 2024). The SIA team were in communication with the EIS engagement team to gauge the level of interest and community acceptance of the project by key stakeholders. This communication was critical in ensuring that the SIA consultation methodology aligned with the EIS engagement outcomes. Notably, it was determined that there was limited community opposition or concern and that social impacts were likely concentrated to adjacent recreational groups and local businesses. Accordingly, the targeted SIA engagement scope (outlined in Table 4.2) demonstrates an approach of engaging with a small sample of potentially sensitive nearby stakeholders.

Stakeholder consultation for the SIA was undertaken between 12 May 2025 and 23 May 2025 via in-person meetings, video teleconference, email and phone. A community reference group meeting was held on 16 May 2025 to provide the community with information about the project and address any questions or concerns.

The purpose of this consultation was to:

– confirm and build on findings from desktop research on the social baseline
– understand the values, aspirations and challenges experienced by residents in the local and regional study area
– identify potential social impacts and benefits from the project, and any groups that may be more vulnerable to these impacts
– identify potential measures to mitigate impacts and maximise benefits.

Following the revision of the project's location, another community reference group meeting was held on 11 September 2025 to inform the community of the change in location and scope of the project.

Participation in the consultation process was voluntary and confidential. Section 4 provides an overview of the consultation activities and relevant issues that have been considered in the assessment of potential social impacts.

2.5 Description and assessment of social impacts and benefits

Following the scoping of social issues described in section 2.1, social impacts were confirmed using a data triangulation method, whereby multiple sources of information were assessed to confirm social impacts. These data sources are summarised below:

– The project description for the EIS to understand the proposed activities that would influence social aspects.
– Baseline conditions against which the social changes/impacts were measured.
– Outcomes of the stakeholder consultation undertaken for the SIA and the project as a whole to understand the existing environment and stakeholder views on potential social changes brought about by the project.
– Relevant literature and studies as referenced throughout the report.
– Relevant chapters of the *Environmental Impact Statement* (GHD, 2025a).
– Relevant draft and final technical studies prepared for the EIS to gather technically sound evidence to identify and assess the social changes resulting from the project:
    - *Visual Impact EIS section* (GHD, 2025a)
    - *Noise and Vibration Assessment* (GHD, 2025b)
    - *Traffic Impact Assessment* (GHD, 2025c)
    - *Preliminary Hazard Assessment* (GHD, 2025d)
    - *Air Quality Assessment* (Astute, 2025 Rev. 3.1).

The evaluation of the identified social impacts was undertaken using a likelihood and magnitude significance rating, based on the significance criteria outlined in the *SIA Guideline* and *Technical Supplement*, and shown in Table 2.4, Table 2.5, Table 2.6 and Table 2.7.

Table 2.4 Defining likelihood levels of social impacts

Likelihood level	Meaning
Almost certain	Definite or almost definitely expected (e.g., has happened on similar projects)
Likely	High probability
Possible	Medium probability
Unlikely	Low probability
Very unlikely	Improbable or remote probability

Table 2.5 Dimensions of social impact magnitude

Dimensions		Details needed to enable assessment
Magnitude	Extent	Who specifically is expected to be affected (directly, indirectly, and/or cumulatively), including any vulnerable people? Which location(s) and people are affected? (e.g. near neighbours, local, regional, future generations).
	Duration	When is the social impact expected to occur? Will it be time-limited (e.g. over particular project phases) or permanent?
	Severity or scale	What is the likely scale or degree of change? (e.g. mild, moderate, severe).
	Intensity or importance	How sensitive/vulnerable (or how adaptable/resilient) are affected people to the impact, or (for positive impacts) how important is it to them? This might depend on the value they attach to the matter; whether it is rare/unique or replaceable; the extent to which it is tied to their identity; and their capacity to cope with or adapt to change.
	Level of concern / interest	How concerned/interested are people? Sometimes, concerns may be disproportionate to findings from technical assessments of likelihood, duration and/or intensity.

Table 2.6 Defining magnitude levels for social impact

Magnitude level	Meaning
Transformational	Substantial change experienced in community wellbeing, livelihood, infrastructure, services, health, and/or heritage values; permanent displacement or addition of at least 20 percent of a community.
Major	Substantial deterioration/improvement to something that people value highly, either lasting for an indefinite time, or affecting many people in a widespread area.
Moderate	Noticeable deterioration/improvement to something that people value highly, either lasting for an extensive time, or affecting a group of people.
Minor	Mild deterioration/improvement to something that people value highly, either lasting for an extensive time, or affecting a group of people.
Minimal	Little noticeable change experienced by people in the locality.

Table 2.7 Social impact significance matrix

	Magnitude level				
	1	2	3	4	5
Likelihood level	Minimal	Minor	Moderate	Major	Transformational
A Almost certain	Low	Medium	High	Very high	Very high
B Likely	Low	Medium	High	High	Very high
C Possible	Low	Low	Medium	High	High
D Unlikely	Negligible	Low	Low	Medium	High
E Very unlikely	Negligible	Negligible	Low	Medium	Medium

This matrix applies to both positive and negative social impacts resulting from changes associated with the proposed modification. The risk rating then determines if mitigation or management actions are required to address the social impact. Negative social impacts with a risk rating of medium, high or very high require mitigation or management actions.

2.6 Recommended social impact mitigation measures

Social impact mitigation and enhancement measures are provided in section 7 to enhance the potential social benefits of the project for stakeholders and communities, and avoid, manage or mitigate the potential social impacts. These measures are in addition to those recommended by other technical reports and EIS chapters, which would also help to manage the potential for social impacts.

The recommended mitigation and management strategies were developed using adaptive management principles, recognising that impacts may change over time, and that ongoing monitoring of impacts would provide the flexibility to accommodate such changes.

It should be noted that the degree to which community members would experience social impacts would vary based on factors such as perceptions and individual values, sensitivity to change, distance from the project, and duration people experience the impacts over. While the assessment of residual risks takes this into consideration, a risk rating for the majority of stakeholders affected by the identified potential impact has been applied. The risk rating would however be higher or lower for some stakeholders given the subjective nature of social impacts which varies based on a stakeholder's ability to adapt to impacts.

3. Legislation and policy context

This section provides an overview of the legislation and policies relevant to this SIA, as described in Table 3.1.

Table 3.1 Review of policies and plans

Title	Description and relevance to this SIA	Relevance to this SIA
State Government		
Environmental Planning and Assessment Act 1979 (EP&A Act)	LMS Energy is seeking approval as State significant development under Part 4, Division 4.7 of the EP&A Act. The objectives of the EP&A Act relevant to this SIA include that the NSW Government aims (clause 1.3): *(a) to promote the social and economic welfare of the community and a better environment by the proper management, development and conservation of the State's natural and other resources,* *(b) to facilitate ecologically sustainable development by integrating relevant economic, environmental and social considerations in decision-making about environmental planning and assessment,* *(c) to promote the orderly and economic use and development of land,* *(g) to promote good design and amenity of the built environment,* *(h) to promote the proper construction and maintenance of buildings, including the protection of the health and safety of their occupants,* *(i) to promote the sharing of the responsibility for environmental planning and assessment between the different levels of government in the State,* *(j) to provide the opportunity for community participation in environmental planning and assessment.*	This SIA has considered these objectives in the scoping and assessment of potential impacts of the project, including opportunities for communities and stakeholders to participate in the SIA consultation process. The SIA will assist the consent authority when making a decision about the project.
Social Impact Assessment Guideline (DPHI, 2025a)	The SIA Guideline was developed to provide a clear and consistent approach to assessing the social impacts of State significant projects. The SIA Guideline provides a framework to identify, predict and evaluate likely social impacts of major projects. It defines the required approach to social impact assessment for major projects. It establishes eight assessment categories to be used in the identification of social impacts. The aim of the categories is to ensure that projects are assessed from the perspective of people and that they deliver socially sustainable outcomes. The guideline is supported by the *Technical Supplement - Social Impact Assessment Guideline for State Significant Projects* (DPHI, 2025b) (Technical Supplement).	This SIA has been prepared in accordance with the requirements of the SIA Guideline and the Technical Supplement. Further information about the methodology for the SIA is provided in section 2.
Regional and Local plans and strategies		
Greater Sydney Region Plan - A Metropolis of Three Cities (Greater Sydney Commission, 2018)	The Greater Sydney Plan sets out a strategic plan for Greater Sydney, with the vision to implement three CBD areas to enable jobs and essential services to be more accessible, which includes the following: – a 40-year vision (to 2056) and establishes a 20-year plan to manage growth and change for Greater Sydney in the context of social, economic and environmental matters – informs district and local plans and the assessment of planning proposals – assists infrastructure agencies to plan and deliver for growth and change – informs the private sector and the wider community of the growth management and infrastructure investment intentions of government.	The SIA addresses how the project affects social and economic impacts both positive and negative.

Title	Description and relevance to this SIA	Relevance to this SIA
Sutherland Shire Community Strategic Plan 2022-2032 (SSC, 2022b)	The strategic plan was created to outline the local community's vision, aspirations and priorities into the future. The plan provides six strategic outcomes for the Shire guided by four key social justice principles including equity, rights, participation and access. The six strategic outcomes in the plan include: – strong civic leadership trusted by an informed and engaged community – a beautiful, protected and healthy natural environment – a creative, caring and healthy community that celebrates culture and diversity – a prosperous, well-educated community with a diverse range of economic opportunities – an active community that enjoys safe, accessible and diverse open places and spaces – a high quality urban environment, supporting a growing and liveable community. This plan will be superseded by the *Draft Community Plan – towards 2035* (SSC, 2025), which provides a vision for a connected and safe community that respects people and nature whilst enjoying active lifestyles in a strong local economy. To achieve the vision, the Draft Community Plan identifies four key themes underpinned by a fifth, Council's leadership role: – Natural and Sustainable – Active and Vibrant – Prosperous and Connected – Planned and Liveable – Trusted Leadership.	The SIA considers how the project contributes to the community strategic plan and the draft community plan outcomes regarding community engagement, health and safety and economic opportunities.
Sutherland Shire Economic Strategy 2018 (SSC, 2018)	The economic strategy proposes four key strategic outcomes which are aimed at improving the vibrancy, liveability, economic diversity and sustainability of the Shire. The four strategic outcomes include: – Provide a prosperous community with a fulfilling work/life balance. – A diverse, resilient and self-sustaining business community providing a prosperous and fulfilling lifestyle. – A skilled workforce contributing to the needs of the local economy. – Increased size and value of tourism's contribution to the Sutherland Shire economy.	The SIA considers how the project contributes to the Economic Strategy outcomes regarding positive impacts on the local and regional economy.
Sutherland Shire Community Development Strategy 2021-2031 (SSC, 2020)	The stated purpose of the community development strategy is to *empower, partner and build the capacity of our community to respond to challenges, generate solutions and promote health and wellbeing*. The strategy includes four areas of focus which are: – Empower the community so they can access care and support. – Maintain and enable community facilities and services that meet the needs of the local community. – Provide for an active, connected and inclusive community. – Build and support the capacity of the community sector to be more skilled, resilient and responsive.	The SIA addresses how the project is critical to enabling the future conversion of the LHRRP site into a recreational parkland, which relates to the third focus area.

4. Community and stakeholder engagement

This section presents a summary of issues relevant to this SIA raised by stakeholders and community members during consultation activities.

4.1 EIS Consultation

This section presents a summary of consultation undertaken by GHD for the EIS. GHD has conducted an engagement program with stakeholders, landholders, agencies and communities from October 2024.

Consultation activities undertaken as part of EIS included:

– Attending a special Community Reference Group (CRG) meeting facilitated by Cleanaway at LHRRP to provide initial details of the bioenergy facility and subsequent regular CRG meeting to provide advice on a revised footprint to achieve better integration with existing biogas management infrastructure.
– Notifying nearby community stakeholders such as sporting clubs, schools, and businesses about the opportunity to comment during the Environmental Impact Statement exhibition phase.
– Statutory engagement with government departments, government agencies, and emergency services. This was also extended to federal and state elected officials.

Section 5.2 of the EIS describes the engagement activities that have been conducted for the EIS and provides a summary of the issues raised. Table 4.1 presents a summary of issues and themes relevant to this SIA and shows that key issues requiring assessment in the SIA were related to local amenity and health and safety impacts during operation.

Table 4.1 EIS consultation outcomes relevant to this SIA

Key issues and themes	Feedback	EIS response	Where addressed in this SIA
Manufacturing	Where are the modules made for the project?	The engines of the generator modules are made in the United States of America. The rest of the module is made in Australia.	N/A
Noise	Will the operational noise level change in comparison to the current facility?	A project emphasis is creating a facility which minimises noise. Beyond 20 m of the site energy generation would have minimal noise impacts. Noise reporting is available in the EIS and demonstrates generally no exceedance across sensitive receivers.	Section 6.2.1.
Visual	Will the generator stack height increase?	The generator height will decrease in comparison to the current facility (to a height of 10.2 m). The tallest structure on site will be the 5 lighting poles with a height of approximately 20 m.	Section 6.2.1.
Hazards	Will the site contain gas storage?	No, the scale of biogas output and resulting energy generation makes biogas storage infeasible.	Section 6.2.4
Hazards	Will the site contain a battery energy storage system as a part of this project, or in the future?	A battery energy storage system is not included in this project due to significant energy production of the system.	Section 6.2.4

4.2 SIA consultation

This section presents a summary of the key social issues and opportunities identified by stakeholders consulted by the SIA team in May 2025. An overview of consultation activities is provided in Table 4.2.

Table 4.2 Summary of SIA consultation activities

Stakeholders	Consultation details	Purpose of consultation activity
ANSTO	In-person meeting	To ground-truth potential social impacts by testing whether findings and assumptions drawn from project information, baseline data, and technical studies are confirmed, contradicted, or complemented by stakeholder insights.
Sutherland Shire Council	Virtual MS Teams Video Call	
Sutherland Police Citizens Youth Club (PCYC) Minibike Club	Email and Phone Call	
Mill Creek Trail Association	Email and Phone Call	
Lucas Heights Motel	Email and Phone Call	

A summary of the key issues raised by stakeholders, and where they have been addressed in the SIA, is provided in Table 4.3.

Table 4.3 SIA consultation outcomes

Key theme	Consultation outcomes	Where addressed in this SIA
Recreational activities	– Recreational groups were not concerned about social impacts and suggested SIA engagement was not necessary.	N/A
	– Noted that the bioenergy facility is enabling the development of the recreational area by providing controls for landfill emissions. – Believe the community would be accepting of the project despite the presence of the recreational area. However, suggested there is a need to manage the amenity impacts on the public open space.	Section 6.2.1
Local amenity	– Suggested there would be limited local amenity impacts to local businesses, due to being contained within an existing landfill site and construction activities being general surface-level earthworks and infrastructure assembly. – Identified activities sensitive to vibration impacts but did not foresee any vibration concerns associated with construction activities.	Section 6.1.1 and 6.2.1
	– Cannot foresee any community concerns and this project assists in mitigating potential odour impacts of landfill biogas through the combustion of captured landfill biogas. – Explained that the noise impact assessment covers and mitigates issues around construction and operational amenity impacts.	Section 6.1.1
	– Cannot foresee any community concerns and noted that odour is typically the only concern associated with the LHRRP site. – Explained that the noise impact assessment covers and mitigates issues around construction amenity impacts.	Section 6.1.1
Economy, business and employment	– Did not foresee any social impacts associated with local business in Lucas Heights.	Section 6.1.3
	– Explained that local employment or procurement opportunities would be view positively by the community. – Identified that there is a need for specialist materials and skills for developing a project of this type, which places constraints on local economic benefits.	Section 6.2.1 and 6.2.2

Key theme	Consultation outcomes	Where addressed in this SIA
Access and connectivity	– Suggested that the use of heavy vehicles is consistent with current traffic movements to and from the LHRRP site and not likely to be experienced as an impact.	Section 6.2.1 and 6.2.2
	– As above.	Section 6.2.1 and 6.2.2
	– Only interest was seeking confirmation that access to their nearby site was not affected by the project.	Section 6.2.1 and 6.2.2
	– Not receiving many complaints around traffic around the site. – Potential for recreational groups to be temporarily affected by truck movements.	Section 6.2.1 and 6.2.2
Health and Wellbeing	– Did not identify any specific concerns regarding impacts to health and wellbeing during construction. Suggested that upgrading the existing facility may improve safety.	Section 6.1.4
	– Not concerned about health and wellbeing due to the site being a like-for-like development on an existing landfill site.	Section 6.1.4
	– Community may be concerned about the safety of being in proximity to the facility. – Community engagement will be important to mitigate potential concerns relating to community health and safety. – Suggested that the department may need to consider a hazard buffer around the facility depending on the findings of the preliminary hazard assessment.	Section 6.2.5

4.3 Stakeholder input to project and design refinements

All input provided by the community and stakeholders during preparation of the EIS is addressed in that assessment, with detailed responses provided in Section 5 of the EIS.

Design refinements were not required based on the available stakeholder engagement outcomes outlined in sections 4.1 and 4.2 showing limited community concerns. However, stakeholder input has informed the development of mitigation and management measures outlined in section 7, such as the CSEP.

If development consent is granted for the project, LMS Energy will continue to engage with stakeholders, including community members throughout the construction and operation of the project.

Key consultation activities will include:

– ongoing regular local stakeholder briefings and meetings, including Sutherland Shire Council (SSC) and the CRG
– regular updates on the project website
– regular community notifications as the project progresses through construction and into operation, and prior to and during decommissioning
– ongoing operation of a community telephone line, email address, mailbox and website, with set response times for project queries and complaints.

The complaints management process for the project during construction and operation will allow anyone in the community to submit complaints if they believe any action is having a detrimental impact on the community, the environment, or their quality of life. The complaints management process will include a feedback process through which the complainant is provided with information in relation to how their concern has been assessed, considered and, where feasible, addressed. An escalation process will also be outlined for complaints that are unable to be resolved satisfactorily.

5. Social baseline

The following sections outline the existing social and economic characteristics of the social locality described in section 2.3 as they relate to the issues identified in the scoping of potential social impacts (section 2.1).

5.1 Project site and surrounding land use

5.1.1 The project site

The project is proposed within the south-eastern corner of the existing LHRRP in the suburb of Lucas Heights (refer to Figure 1.1). The project site refers to the area of about 1.80 hectares and would be located on Lot 102 DP 1009354 (existing power station site) within the LHRRP (refer to Figure 1.2). The project is a direct replacement for the existing power station, planned to be developed immediately adjacent to the current facility. The project involves upgrading the existing renewable energy infrastructure to deliver a modernised bioenergy facility at the existing power station site, supporting the operations of LHRRP.

The LHRRP consists of two land parcels, one owned by Cleanaway and the other owned by ANSTO. ANSTO leases its area of the LHRRP to Cleanaway for waste management or other agreed purposes. The bioenergy facility is proposed to be located within the lease area on land owned by ANSTO. Cleanaway would grant LMS Energy a commercial sublease to build and operate the bioenergy facility.

The LHRRP landfill currently services a significant proportion of Sydney's putrescible waste and is a key strategic asset for waste management of the Greater Sydney region. The current operations at LHRRP include landfill and processing of both general solid waste and organic material.

The suburb of Lucas Heights has no residential areas and no recorded residential population (refer to Table 2.2). Other than the LHRRP, the other main features of Lucas Heights include Gandangara State Conservation Area (GSCA), and an industrial and commercial area in the south of the suburb which includes a variety of educational, manufacturing, commercial and community uses. The closest residential areas to the project site are the southern edge of Barden Ridge and western edge of Engadine (refer to Table 2.2). These communities are discussed further in section 5.2.

5.1.2 Land uses and key features

The project site is zoned SP1 – Special Activities under the Sutherland Shire Local Environmental Plan 2015 (Sutherland Shire LEP). The surrounding areas are zoned as National Parks and Nature (C1), Environmental Conservation (C2), Special Activities (SP1) and Infrastructure (SP2) (NSW, 2025). The areas immediately surrounding the site include the LHRRP, and areas of vegetated land. Special land use activities are key features of the local area surrounding the LHRRP site, which include Defence activities, ANSTO and its associated facilities and the LHRRP.

The GSCA is located just north of the project site and occupies an area of approximately 6.9 ha of protected Shale/Sandstone Transition Forest. Established in 2011, the GSCA is open to the public, with a number of walking and biking trails throughout the area and vehicle access off Heathcote Road (Office of Environment and Heritage, 2014). The surrounding vegetated and greenfield areas of GSCA also include unofficial walking and biking trails as well as popular bouldering areas to the east. PCYC Sutherland has a minibike club bordering the southern end of the LHRRP which provides rider training to junior minibike riders every Sunday from 9am to 3pm (Sutherland PCYC Minibike Club, 2025). The Sydney International Clay Target Association occupied a lease located adjacent to the west of the LHRRP prior to the licence expiring in March 2025 (Australian Sporting Clays Sydney, 2025). The associated recreational activities have ceased following the lease expiry.

The industrial area to the south-east of the project site is predominantly made up of infrastructure and services for ANSTO operations, which include:

– the Nandin Innovation Centre (1.2 km)
– Australian Institute of Nuclear Science and Engineering (1.4 km)
– ANSTO Discovery Centre (1.3 km)
– KU ANSTO Children's Centre (1.5 km).

There are a number of other related businesses in the precinct, such as:

– Lucas Heights Motel (1.4 km)
– Vita Medical Limited (1.1 km).

As outlined in Section 2.6.7 of the EIS, the LHRRP is planned to be progressively rehabilitated and transformed into a public parkland following the cessation of landfilling, which is forecast to be completed sometime between around 2037 to the early 2040's. The project site falls outside the designated future post-closure parkland area, ensuring that long-term land use planning objectives for the LHRRP remain unaffected. As part of the landfill's post-closure strategy, areas designated for public parkland and green space rehabilitation would not be encroached upon by the bioenergy facility, preserving the integrity of planned environmental restoration and community-use initiatives (refer to Section 2.7.3 of the EIS).

5.1.3 Access and connectivity

The main entrance to the project site is via Little Forest Road which connects to New Illawarra Road. There are no other entrances to the LHRRP and project site however, there is an emergency exit which leads onto Heathcote Road. There are multiple access driveways along Heathcote Road and New Illawarra Road which enable access to the surrounding clubs and activities.

Old Illawarra Road is the primary local access road connecting New Illawarra Road to the suburb of Barden Ridge, which represents the nearest residential population by road approximately 3 km directly from the project site.

5.2 Local study area

The local study area refers to the immediately surrounding areas, which have potential to experience direct social impacts resulting from project-induced changes during construction and operation of the project. This section provides a baseline snapshot of the key social and economic characteristics of the local study area. The statistical areas used to represent the local study area (as outlined in Table 2.2) include Lucas Heights, Barden Ridge and Engadine. As there is no residential population in Lucas Heights, it has been excluded from the demographic profile and analysis.

Lucas Heights primarily consists of recreational areas and industrial sites, with significant portions dedicated to the GSCA, Lucas Heights Conservation Area and ANSTO. The area also features the Mill Creek Trail Association, offering a variety of mountain biking experiences for all skill levels, and numerous walking tracks. Additionally, the Sutherland Mini Bike Club provides a safe and structured environment for young riders to develop motorcycling skills.

Barden Ridge is located approximately 2 km north-east of the LHRRP. The suburb is characterised by low density housing; recreational areas include The Ridge Golf Course to the south-east and a variety of community infrastructure. There are two schools in the suburb which are the Lucas Heights Community School and Shire Christian School. The suburb also includes three childcare centres, two churches and eight parks as well as The Ridge Sporting Complex and Menai Men's Shed. Local clubs in the suburb include the Menai Rugby Club, Shirewood Forest Archery Club and the Southern Sydney Model Aero Club.

The suburb of Engadine is located approximately 2.3 km south-east of the LHRRP with bushland separating the suburb from the project. Engadine mainly consists of low to medium density housing, commercial and retail precincts as well as community infrastructure and services. The suburb has seven schools and 11 childcare services as well as 11 parks and reserves. There are a variety of community centres and facilities including ANZAC Youth and Recreation Centre, Engadine Community Centre and Bosco Menshed Engadine. There are also three supermarkets and a variety of retail and commercial businesses in the town centre which serve local residents.

5.2.1 Demographic profile

The demographic profile is key to identifying existing trends that may exacerbate or reduce the severity of how project-induced are experienced as social impacts. The key demographic indicators relevant to the scoped impacts for this project are age, socio-economic (dis)advantage, household and health.

5.2.1.1 Population

The population of Barden Ridge has remained relatively stable over the past decade, with a slight decline of 4.6% between 2016 and 2021, following earlier growth of 7.1% between 2011 and 2016. The area is characterised by an older age profile, with 24.5% of residents aged between 50 and 64 years, which is significantly higher than the Sutherland Shire average (19.0%). This trend suggests an aging population, which may reflect long-term residency and strong community attachment to the local area.

In contrast, Engadine has experienced modest but steady growth, increasing by 4.4% from 2016 to 2021. The median age is 39, aligning with the NSW average. The community has a comparatively younger demographic, with a larger proportion of residents under the age of 18 (26.5%) than both Barden Ridge and the Sutherland Shire average (22.2%). This younger age structure points towards a family-oriented suburb, with likely demand for schools, recreation, and family services.

5.2.1.2 SEIFA: Socio-economic index

Socio-economic advantage and disadvantage are defined broadly by the Index of Relative Socio-Economic Advantage and Disadvantage (IRSAD) in terms of people's access to material and social resources and their ability to contribute to society. To capture this broad definition, the IRSAD captures a range of data points, including income, education, employment, occupation, and housing. The IRSAD divides a population into ten equal groups, called a decile. The lowest scoring 10 percent of these groups are given a decile number of 1, which indicates the highest level of disadvantage, and the highest scoring 10 percent of areas are given a decile of 10, which indicates the highest level of advantage.

Based on the SEIFA model, Engadine scored within decile 10 within Australia and 9 within NSW which indicates a very high level of advantage in the suburb (ABS, 2023). Barden Ridge scored within decile 10 against both Australia and NSW, indicating a very high level of advantage (ABS, 2023).

5.2.1.3 Households and families

Out of the 1,179 families living within Barden Ridge, 58.4% were couple families with children, 31.6% were couple families without children and 10.5% were one parent families in 2021 (ABS, 2022). There are a total of 5,060 families in Engadine, 53.1% being couple families with children, 32.5% were couple families without children and 13.6% were one parent families. The proportion of couple families with children is 9.0% higher in Barden Ridge and 3.7% higher in Engadine compared to Sutherland Shire LGA (49.4%).

5.2.1.4 Health

The prevalence of different long term health conditions is generally similar between Barden Ridge, Engadine and Sutherland Shire LGA. However, there was a slightly higher prevalence of asthma in Barden Ridge (8.7%) and Engadine (8.8%) compared to Sutherland Shire LGA (7.5%) (ABS, 2022). Other lung conditions were less common in the local study area, affecting 1.1% of the population in Barden Ridge and 1.5% of the population in Engadine compared to 1.3% in Sutherland Shire LGA. The other most prevalent health conditions in Barden Ridge and Engadine included arthritis (7.9% and 8.8% respectively), mental health conditions (7.4% and 8.0% respectively) and other long-term health conditions not specified in the ABS Census (10.0% and 8.0% respectively) (ABS, 2022).

5.2.2 Economic profile

5.2.2.1 Industry profile

The industry trends were quite similar between Barden Ridge, Engadine and Sutherland Shire LGA as shown in Figure 5.1. Healthcare and Social Assistance was the largest industry of employment at 12.1% in Barden Ridge, 13.7% in Engadine and 12.5% in Sutherland Shire LGA. The other top industries by employment included Construction (11.30%), Education and Training (10.10%) and Professional, Scientific and Technical Services (9.7%).

Industry	Barden Ridge SAL	Engadine SAL	Sutherland Shire LGA
Health Care and Social Assistance	12.1%	13.7%	12.50%
Construction	10.9%	12.4%	11.30%
Education and Training	11.1%	11.1%	10.10%
Professional, Scientific and Technical Services	9.4%	7.7%	9.70%
Retail Trade	9.3%	7.7%	8.30%
Public Administration and Safety	5.9%	7.9%	6.80%

Figure 5.1 Industry profile, 2021

5.2.2.2 Labour force

As shown in Table 5.1, in 2021 Barden Ridge had a total labour force of 2,393 persons making up 39.3% of the population which is lower than the proportion in Engadine (47.8%) and Sutherland Shire LGA (64.6%). The employment rate was slightly higher in Barden Ridge at 97.5% and Engadine at 97.3% compared to Sutherland Shire LGA (96.9%).

Table 5.1 Labour force participation, 2021

Labour force	Barden Ridge	Engadine	Sutherland Shire LGA
Total labour force	2,393 persons	9,088 persons	121,182 persons
Employed	97.5%	97.3%	96.9%
Unemployed	2.6%	2.7%	3.1%
Labour force participation	39.3%	47.8%	64.6%

5.3 Regional study area

5.3.1 Overview

Sutherland Shire LGA encompasses the south eastern edge of Sydney as well as Royal National Park and most of Heathcote National Park. The LGA is characterised by high density residential buildings and business and shopping precincts in the north, and suburban, semi-rural and rural areas in the south.

Sutherland Shire includes valuable natural assets such as the Georges River, Port Hacking waterways, Kamay National Park and the Royal National Park (SSC, 2022b). The traditional custodians of the land within Sutherland Shire LGA are the Dharawal people, including clans of the Dharawal language group such as the Gweagal clan (SSC, 2025).

The *Sutherland Shire Community Strategic Plan 2022-2032* emphasises the importance of outdoor lifestyles, natural areas and sport and leisure facilities within the local community. This includes preserving the natural environment within the LGA as well as improving the quality and accessibility of outdoor leisure facilities including parks, beaches and nature reserves (SSC, 2022b).

The population of the Sutherland Shire is primarily made up of a mature, family-oriented population with a population of over 230,000 and 64,749 families, most of which are couples with children (49.4%). The increase of lone-person households from 20.3% in 2016 to 22.2% in 2021 (ABS, 2022) highlights potential vulnerabilities, particularly in relation to access to transport, health services, and housing needs. Population growth of 5.4% between 2016 (ABS, 2017) and 2021 (ABS, 2022) reflects steady residential and high-rise apartment development.

Based on a review of relevant policies (section 3), and the outcomes of community and stakeholder engagement (section 4), the values and priorities of the Sutherland Shire LGA community can be summarised as:

- protecting and conserving the environment and natural assets including beaches and waterways
- maintaining and improving public infrastructure which supports active, outdoor lifestyles
- a focus on community prosperity, specifically economic diversity and high quality of life
- supporting local businesses and employment opportunities, especially in the tourism sector.

5.3.2 Demographic profile

5.3.2.1 Population

The total population of Sutherland Shire LGA was 230,211 persons in 2021. It is projected that there will be 252,105 persons living in Sutherland LGA by 2041 which is a growth of 9% from 2021 (NSW Government, 2025). Sutherland Shire LGA has an aging population with 18.8% of the population over 65 years which is fairly consistent with NSW which has a proportion of 17.6% of people over 60 years. The *Sutherland Shire Community Development Strategy 2021-2031* states that by 2031, 67,701 or 25.5% of the population in Sutherland Shire LGA will be over the age of 60. There were 3,273 persons identifying as Aboriginal or Torres Strait Islander in 2021, making up 1.4% of the total population. This was slightly less than the Greater Sydney region (1.7%) and less than the proportion for NSW 3.4% (ABS, 2022).

5.3.2.2 Education

In Sutherland Shire LGA, a higher proportion of the population (63.1%) have completed year 12 or equivalent compared to NSW where the proportion is 58.9%. This marginal difference can likely be attributed to the higher levels of socio-economic advantage in Sutherland Shire LGA (refer to section 5.2.1.2). The percentage of people with a Postgraduate degree and/or Bachelor degree is higher in NSW (13.1% and 32.9% respectively) compared to Sutherland Shire LGA (9.9% and 31% respectively).

5.3.3 Economic profile

5.3.3.1 Gross regional product

The Gross Regional Product of Sutherland Shire LGA was $14,176 million in the financial year ending June 2023, which represented 1.93% of the State's total Gross State Product (GSP) (Economy.id, 2025). The industry with the largest output value in Sutherland Shire LGA is Construction at $3,915 million and making up 18.7% of output followed by Professional, Scientific and Technical Services ($2097.4 million or 10%) and Manufacturing ($1,930.4 million or 9.2%) (Economy.id, 2025). This is consistent with the largest industries in NSW by output which also include Construction (13.4%), Professional, Scientific and Technical Services (9.7%) and Manufacturing (9.5%) (Economy.id, 2025).

5.4 Key findings

The findings of the analysis of the social baseline of the local and regional study most relevant to this SIA including the following:

- The project is contained within the LHRRP, which is a brownfield site surrounded by a range of natural features including vegetation bushland, which is used for recreational bushwalking and bike riding.
- Community values and priorities identified include environmental conservation, outdoor recreation and supporting the local economy.
- The project site and suburb of Lucas Heights has no resident population however there are multiple recreational groups and businesses in the immediately surrounding area, notably ANSTO, the PCYC Minibike Club and LHRRP.
- ANSTO is a commonwealth government agency and landowner, which has various operations within 1 km of the project site.
- There is a higher proportion of couple families with children in Barden Ridge and Engadine compared to Sutherland Shire LGA which reflects the suburban character of the local study area.
- Asthma is the most prevalent long-term health condition in both Barden Ridge (8.7%) and Engadine (8.8%), indicating a potential sensitivity to changes in local air quality. However, both suburbs are located over 2 km from the project site, with natural landscape buffers providing a level of separation that reduces the likelihood of direct air quality impacts on these residential areas.
- There is a concentration of local business in Lucas Heights reflecting the presence of the LHRRP and ANSTO.
- The largest industry by output in Sutherland Shire LGA is the construction industry while the largest industry by employment is healthcare and social assistance.

– In 2016, 16.9% of Sutherland Shire's population was aged 65 years and over. By 2021, this proportion had increased to 18.8% of the population. This increase underscores an ageing demographic trend in Sutherland Shire, consistent with broader state-level ageing patterns.

6. Social impact assessment

This section presents an assessment of the potential social impacts that may result during construction and operation of the project. The existing power station generator units and other ancillary infrastructure not required for operation of the new bioenergy facility will be progressively decommissioned following the commissioning of the new facility and potential impacts are expected to be commensurate with the construction phase of the project. Final decommissioning of the site will not occur until well into the 2040s, which is beyond the timeframe of current land uses and baseline conditions provided in the report. The facility is designed to operate for 25 to 30 years, continuing after landfilling ceases around 2037 to 2040, with a modular design allowing gradual decommissioning based on biogas availability and operational viability.

Impact identification and description has been informed by various sources of information and have been assessed in accordance with the impact assessment methodology outlined in Section 2.5.

6.1 Construction

6.1.1 Changes to local amenity

6.1.1.1 Construction noise, vibration and air quality

Construction and decommissioning activities may generate noise, vibration and changes to air quality, which could lead to reduced amenity for stakeholders and businesses in close proximity to the project site and along haulage routes. Section 3.3 of the EIS (GHD, 2025a) reports that the construction activities and associated machinery and equipment required for the construction of the project have potential to result in the generation of noise and dust (refer to Table 1.3 for relevant construction activities).

Given the surrounding land uses identified in section 5.1.2, these impacts will most likely be experienced by recreational users such as the Sutherland Minibike Club, Mills Creek Trail Association and people accessing within the LHRRP site. SIA consultation did not identify specific concerns from local stakeholders about potential amenity changes during construction. This is supported by findings from the following EIS technical studies:

– The *Noise and Vibration Impact Assessment* (GHD, 2025b) reports that some activities may generate noise, such as ground and excavation works, and construction of structures. The results indicate that construction works are not predicted exceed the relevant noise criteria at any sensitive receiver. Human comfort or cosmetic damage vibration impacts due to construction activities are not anticipated at sensitive receivers as the nearest sensitive receiver is over 1 km from the project site.
– The *Air Quality Assessment* (Astute Environmental Consulting, 2025) found that dust and other air pollutants that present health risks will comply with the relevant criteria at sensitive receptors located in proximity to the project site (NSW EPA, 2022).

In accordance with the Construction Management Plan, LMS communicate with Cleanaway daily regarding daily site activities. Construction of the project would be undertaken in accordance with a construction environmental management plan (CEMP). The plan would detail measures to manage risks associated with the construction activities including removal of waste, generation of dust and noise, and any other environmental impacts outlined in the EIS.

6.1.2 Access and connectivity

During the construction and decommissioning phase, the project would involve an increase in light and heavy vehicles resulting from movements by construction contractors and the transport of materials to the project site. Little Forest Rd and New Illawarra Rd are the primary access roads connecting to the project site, which serves as a key connection between the Heathcote Road and the Princes Highway, facilitating regional traffic movements. The *Traffic Impact Assessment* (GHD, 2025c) found there are existing delays for road users turning into Little Forest Road from the north (55 seconds), and when turning from Little Forest Road to head south on New Illawarra Road (44 seconds). The project may slightly increase these delays. However, most of the people making these turns are likely to be workers at the LHRRP or visitors to the waste disposal facilities. These users are generally spread across a broader regional study area and Sydney SUA, rather than being concentrated within the local

study area. The *Traffic Impact Assessment* (GHD, 2025c) found that daily peak travel demand during operation would be approximately:

– 30 Light vehicle movements (15 inbound in the AM, 15 outbound in the PM)
– 8 Heavy vehicle movements (2 inbound and 2 outbound in the AM, 2 inbound and 2 outbound in the PM).

The minor increase in traffic has limited potential to result in changes to accessibility or to generate concerns around road safety and traffic congestion and delays. Due to the existing road capacity and the distance of residential areas from the project site, the residential population in the local study area (Engadine and Barden Ridge) are unlikely to notice the changes to traffic resulting from the project. SIA consultation with nearby recreational groups, local businesses and local council did not identify specific concerns regarding traffic congestion or safety along the access route. During engagement adjacent recreational groups sought updated information regarding how the project will affect their access to recreational sites.

The *Traffic Impact Assessment* (GHD, 2025c) has recommended the development of a Construction Traffic and Pedestrian Management Plan (CTPMP) to mitigate and manage traffic impacts.

6.1.3 Economy, business and employment

6.1.3.1 Local employment and procurement benefits

A small portion of anticipated capital expenditure for the project may flow into the local and regional economy through procurement opportunities for a small number of local businesses that would supply construction. Importantly parts for the generation units are being manufactured in Australia. LMS anticipates opportunities for local civil, electrical, and mechanical contractors during the construction period. Various local contractors are being considered for the works, and tenders will be held in due course. Other minor opportunities may include the supply of hire equipment to site or other ad hoc construction services, such as the supply of minor construction materials and consumables, as well as freight or cranage.

The project would require 15 FTE positions during construction, some of which are specialised roles that may limit the extent of local employment opportunities. The baseline data in Section 5.2.2 shows construction is the top industry by GSP in both the regional study area, which suggests that the project may draw on the regional study area population to meet a limited number the construction workforce requirements. SIA engagement identified that while local employment and procurement opportunities are viewed positively by the local community, it was also acknowledged that the specialised nature of the project was likely to limit the extent to which these local economic and procurement benefits can be realised. Nonetheless, these opportunities align with the local employment and procurement objectives of both the Sutherland Shire Community Strategic Plan (Sutherland Shire CSP) (SSC, 2022b) and the Sutherland Shire Local Strategic Planning Statement (SSC, 2020) (Sutherland Shire LSPS) outlined in Section 2.5 of the EIS.

It is recommended that the project considers the availability, presence, and capacity of the workforce in the local and regional study area for the construction of the project, to maximise the social and economic benefits. However, there may be a need to source certain specialised contractors and workers with both specialised and general construction skills from the broader Sydney area, depending on project requirements.

6.1.4 Community health and wellbeing

6.1.4.1 Community safety

Construction activities for the Project include earthworks, hot work (i.e. grinding and welding), trenching, use of heavy vehicles and horizontal drilling, which have potential for both perceived and real community safety risks. However, these activities will be contained within the existing LHRRP site, which is 2 km from the nearest residential area. The project site is in proximity to users of Little Forest Road, with 100 m of bushland separating them. The project site is also directly adjacent to a dirt carpark for the LHRRP, and the Sutherland Mini Bike Club.

The proximity of these activities to surrounding bushland and existing biogas infrastructure has been identified as risks in the *Preliminary Hazard Assessment* (GHD, 2025d). The *Preliminary Hazard Assessment* stated that construction safety would be addressed through the Construction Management Plan, and Construction Safety Management Plan. SIA engagement with nearby stakeholders revealed no community safety concerns associated with construction activities. Despite limited concerns, to further mitigate these potential risks it is recommended that the CSEP maintains communication with nearby stakeholders about the key construction activities.

6.1.5 Summary of construction and future decommissioning impacts

Table 6.1 presents a summary of the social impacts described in section 6.1. The magnitude and likelihood of each impact have been determined in accordance with the methodology outlined in section 2. The significance rating shown in Table 2.4 has been applied to each social impact based on the outcome of this assessment.

Table 6.1 Social impact summary – construction and decommissioning

Summary of social impact	Stakeholders affected	SIA Guideline social impact category	Magnitude	Likelihood	Significance	Mitigation measures	Magnitude	Likelihood	Residual significance
Changes to local amenity									
Increased noise, vibration and dust as a result of construction activities may disturb stakeholders located in close proximity to the project site and along haulage routes. Due to the surrounding land uses and containment within the LHRRP site, there is limited potential for disturbances to local businesses and recreational activities.	Residents in close proximity to project site and along haulage routes	Surroundings	Minimal	Possible	Low Negative	CSEP CEMP	Minimal	Unlikely	Negligible Negative
Access and connectivity									
Light and heavy vehicle movements along New Illawarra Rd may temporarily increase traffic volumes for road users at peak times. Although increased traffic would be within daily fluctuations of the arterial road network, local residents, businesses and recreational users are unlikely to experience noticeable delays.	Community members in the local study area	Accessibility	Minor	Possible	Low Negative	CSEP CTPMP	Minor	Unlikely	Low Negative
Economy, business and employment									
Limited potential for direct employment and procurement opportunities for a small number of local and regional businesses, particularly those in the construction industry, which would contribute to the local and regional economy.	Businesses in the local and regional study area	Livelihoods	Minimal	Unlikely	Negligible Positive	No additional mitigation	Minimal	Unlikely	Negligible Positive

Summary of social impact	Stakeholders affected	SIA Guideline social impact category	Magnitude	Likelihood	Significance	Mitigation measures	Magnitude	Likelihood	Residual significance
Community health and wellbeing									
Construction activities for the Project have potential for both perceived and real community safety risks, such as hazard scenarios associated with construction activities. Due to the containment of the project within the LHRRP, the potential for associated health and wellbeing impacts is limited to users and workers of the LHRRP, including the Sutherland Minibike Club.	Local communities	Health and wellbeing Community	Minor	Possible	Low Negative	CSEP PHA Mitigations	Minor	Unlikely	Low Negative

6.2 Operation

6.2.1 Changes to local amenity

6.2.1.1 Operational noise, vibration, air quality and visual landscape

Operation activities have potential to result in project-induced changes to visual amenity, air quality and noise and vibration. However, many of the operational characteristics, such as odour, noise, and visual exposure, are already established features of the local amenity context. Section 3.4 of the EIS (GHD, 2025a) reports that project specifications relevant to local amenity changes include custom designed generator enclosures that will be fully insulated to attenuate noise, twenty 10.2 m generators exhaust stacks and five 20 m poles to mitigate lightning strikes. Given that the closest residential area is located approximately 23 km away, changes to local amenity due to increased noise, vibration and dust and visual landscape would not affect residents. However, there is potential for local amenity changes to be experienced by recreational land users.

Given the location of the project within an existing industrial area and the presence of an existing power station, adjacent stakeholders are not likely to be sensitive to amenity changes during operation. This was confirmed during SIA engagement with surrounding recreational groups (refer to Table 4.2) who shared no concerns about local amenity impacts. This is also supported by findings from the following EIS technical studies, which suggest limited local amenity changes:

– The *Noise and Vibration Assessment* (GHD, 2025b) states that the predicted noise levels comply with the adopted criteria at all receivers and as such, noise impacts are not anticipated during the operation of the facility. There was potential for minor exceedance of criteria for recreational users of the future parkland areas in close proximity to the site, although it is noted that the bioenergy facility is unlikely to be operating at full capacity during the post closure period and ongoing gas management is a key requirement to enable the successful transition to parkland.
– *Air Quality Assessment* (Astute Environmental Consulting, 2025) modelling predicts that emission concentrations at the nearest sensitive receptors will remain below the relevant criteria.
– The *Visual Landscape and future land use* Section 7.1 of the EIS (GHD, 2025a) noted that sensitive receivers include residents, workers and visitors to the LHRRP and adjacent Sutherland Minibike Club, and future users of the community parkland during the LHRRP post closure period. The assessment revealed that the project site is not visible from Little Forest Road as it is mostly filtered or screened by mature vegetation, fencing, and topographical features.

The project is situated within an existing landfill site, which means the area has already been altered and developed for waste management purposes and the existing power station. Project changes will blend in with the current landscape features.

The project will reduce the risk of odour and gas-related emissions during operation of LHRRP, supporting long-term amenity and quality of life for nearby land uses. LHRRP operations environmental management plan (OEMP) identifies that landfill biogas management is required to assist control of off-site migration of landfill biogas emissions, minimise odour and recover energy from landfill biogas.

It is recommended that the CSEP continues to be developed and implemented throughout operation, which includes sharing information with local communities (particularly nearby businesses and recreational organisations) about how these potential and perceived impacts would be managed. An OEMP would tie in with existing evacuation plans and other relevant operational management measures outlined in the LHRRP OEMP.

6.2.1.2 Reduction of community exposure to landfill emissions

The project is expected to reduce the risk of odour and gas-related emissions during operation, supporting long-term amenity and quality of life for surrounding land uses. During SIA engagement, stakeholders expressed positive perceptions that the project would help enable the future transition of the LHRRP into a public recreational area. The project was also seen as contributing to broader emission reductions associated with landfill decomposition, generating local amenity benefits for both the local and regional study areas.

No enhancement measures are required for this positive social impact. However, these local amenity benefits of emission reductions may be communicated with local stakeholders through the CSEP.

6.2.2 Access and connectivity

During operation, traffic associated with the project will primarily involve light vehicle movements by site staff and contractors, as well as heavy vehicle movements transporting waste to the facility. The *Traffic Impact Assessment* (GHD, 2025c) found that daily peak travel demand during operation would be approximately:

– 12 Light vehicles movements (6 inbound in the AM, 6 outbound in the PM)
– 4 Heavy vehicles movements (2 inbound in the AM, 2 outbound in the PM).

All parking shall be contained within the project site premises. Trips could occur at any time during the hours of operation between 7am and 5pm from Monday to Friday and if required, and between 8am and 5pm on Saturday to Sunday.

During operation, six light vehicle movements and two heavy vehicle movements in the AM peak (6.45 to 7.45am) and PM peak (3.30 to 4:30pm) are expected. This increase is not expected to disturb nearby stakeholders, and residents in the broader local study area are not expected to notice the increase. This was confirmed during the SIA engagement, where no specific concerns were identified regarding traffic congestion or road safety during the operational phase.

Through a CSEP, LMS will notify local stakeholders, notably adjacent recreational groups, about potential impacts to accessibility resulting from operational activities, if any potential impacts are identified.

6.2.3 Economy, business and employment

The operational phase of the project is expected to support six full time equivalent (FTE) staff related to site operations, monitoring, and maintenance. These jobs will provide stable employment and have potential to be filled by workers from within the local and regional labour market. There is also potential for the project to maintain the existing operational job roles associated with existing power station.

Benefits of the local community are likely to be realised through a commitment to maximising local employment. A limited number of local procurement opportunities may also be created through the operation of the facility maintenance and cleaning services, security services and so on. Additionally, there may also be limited indirect economic benefits for some local service providers and business (such as food outlets and petrol stations).

It is recommended that the project considers the availability, presence, and capacity of the workforce in the local and regional study area for the operation of the project, to maximise the social and economic benefits. However, there may be a need to source certain specialised contractors and workers with both specialised and general operational skills from the broader Sydney area, depending on project requirements.

6.2.4 Community health and wellbeing

During stakeholder engagement for the EIS issues related to community health and wellbeing were addressed through providing stakeholders with detailed information on the need and scale of the proposed development.

A Preliminary Hazard Analysis (PHA) (GHD,2025d) identified risks associated with potential operational failure scenarios for both individual and societal risk. The PHA assessed the consequence of hazard scenarios including:

– Transformer fire or explosion
– Biogas pipework or flange leak or rupture on an above ground section of the generator fuel gas header or a generator biogas inlet line
– Biogas pipework or flange leak or rupture inside a generator enclosure.

The risk contours demonstrate the risk to individuals within surrounding land uses comply with the relevant HIPAP 4 risk criteria within the site boundary and the development would fall within the negligible societal risk region. The risk to surrounding receivers such as the Sutherland Mini Bike Club is therefore considered to be acceptable.

The future development of the recreational parkland west of the bioenergy facility (refer to section 7.1.6 of EIS) may result in perceptions of health and wellbeing impacts. Stakeholder engagement findings outlined in section 4 suggest that there are limited concerns regarding community health and wellbeing related to the operation of the project. The absence of health and safety concerns by nearby stakeholders of the existing powerplant facility suggests it is unlikely for these concerns to be perceived prior to the establishment of the recreational parkland. However, there is potential these concerns to emerge in the future as the wider landscape undergoes land use

changes from special use to recreational. Regarding this issue, the Sutherland Shire Council suggested during SIA focused engagement that there may be a need to consider establishing a hazard buffer around the facility depending on the findings of hazard assessments.

To assist with managing potential community concerns, it is recommended the CSEP has a focus on sharing safety information with communities and stakeholders about project timeframes and benefits. Through a CSEP, LMS will notify local stakeholders, including nearby businesses and recreational organisations about potential impacts resulting from operational activities, if required. The management systems outlined in Section 8 of the *Preliminary Hazard Assessment* and the mitigation measures outlined in Section 9 will ensure that real risks associated with health and wellbeing are avoided, minimised and mitigated.

6.2.5 Summary of operation impacts

Table 6.2 presents a summary of the social impacts described in Section 6.2. The magnitude and likelihood of each impact have been determined in accordance with the methodology outlined in Section 2. The significance rating shown in Table 2.4 has been applied to each social impact based on the outcome of this assessment.

Table 6.2 Social impact summary - operation

Summary of social impact	Stakeholders affected	SIA Guideline social impact category	Magnitude	Likelihood	Significance	Mitigation measures	Magnitude	Likelihood	Residual significance
Changes to local amenity									
Amenity impacts are expected to be consistent with current operational activities. Any potential changes to reduced local amenity is expected to be limited to local businesses and recreational land users.	Businesses and recreational users in close proximity to project site	Surroundings	Minimal	Possible	Low Negative	CSEP OEMP	Minimal	Unlikely	Low Negative
The project will reduce the risk of odour and gas-related emissions during operation of the LHRRP, supporting long-term amenity and quality of life for nearby recreational land uses.	Businesses and recreational users in close proximity to project site	Surroundings	Minimal	Likely	Low Positive	N/A	Minimal	Likely	Low Positive
Access and connectivity									
Light and heavy vehicle movements have limited potential to generate health and safety or traffic congestion concerns with six light vehicle and two heavy vehicle movements during peak periods.	Community members in the local study area and road users	Accessibility	Minimal	Possible	Low Positive	CSEP CTPMP	Minimal	Possible	Low Negative
Economy, business and employment									
Limited direct and indirect procurement and employment opportunities during operation would contribute to the regional economy. These opportunities would be related to site operations, monitoring, and maintenance.	Local and regional communities	Livelihoods	Minimal	Unlikely	Negligible Positive	No additional mitigation	Minimal	Unlikely	Negligible Positive

Summary of social impact	Stakeholders affected	SIA Guideline social impact category	Magnitude	Likelihood	Significance	Mitigation measures	Magnitude	Likelihood	Residual significance
Community health and wellbeing									
Potential for impacts to community health and wellbeing due to community concerns and risks associated with hazard scenarios, such as operational failures.	Local communities.	Community	Minor	Possible	Low Negative	CSEP PHA Mitigations	Minor	Unlikely	Low Negative

6.3 Cumulative impacts

Cumulative impact screening outlined in section 6.8.3 of the EIS identified potential cumulative social and economic impacts associated with the project due to overlap with the Mill Creek Carpark and Cycleway Project. The cumulative impact screening identified limited overlap with Lucas heights GO facility and identified cumulative bushfire impacts with the LHRRP Flare modification (refer to section 7.6.3 of the EIS).

The screening identified potential accessibility pressures to be experienced along Little Forest Road as a result of the overlap with the Mill Creek Carpark and Cycleway Project, which may lead to cumulative traffic impacts of heavy vehicles and potentially trailers and/or mountain bikes. The cumulative pressures are expected to be limited to the construction phase for the Mill Creek Carpark and Cycleway Project.

7. Mitigation and management of social impacts

The social impacts and opportunities identified and assessed in this report will be managed and mitigated through a range of measures recommended in this report, and by other relevant mitigation measures recommended in other EIS specialist studies (such as the noise and vibration assessment, landscape and visual assessment, and traffic impact assessment). These mitigation and management measures include:

– CEMP outlined in section 3.3.5 of the EIS
– OEMP outlined in section 3.4.3 of the EIS
– CSEP outlined in section 5 of the EIS
– CTPMP outlined in the *Traffic Impact Assessment*
– Noise mitigation measures outlined in Section 6 of the *Noise and Vibration Impact Assessment*
– Air quality mitigation measures outlined in Section 6.2.5 of the EIS.

Comprehensive and appropriate communication and engagement with the community and other key stakeholders will play a key role in managing potential social and economic impacts during construction, operation and decommissioning. Effective communication and engagement are fundamental to reducing risk and minimising potential impacts. Identifying, engaging and effectively communicating with stakeholders is critical to the successful delivery of the project.

LMS Energy will continue to engage with stakeholders and the community in the lead up to, and during, construction drawing on the CSEP that has been prepared for the project.

Recommended social impact mitigation and management measures are summarised in Table 7.1.

Table 7.1 Recommended mitigation measures

Social impact / benefit	Mitigation measure	Responsibility	Timing
Social impacts, communication and engagement	LMS Energy will continue to develop and implement the CSEP to guide the management and delivery of community and stakeholder engagement in the lead up to and during construction, and as required during operation and decommissioning, to ensure that: – accurate and accessible information about the project is provided – feedback from the community is encouraged – opportunities for input are provided – community members and stakeholders with the potential to be affected by construction activities are notified in a timely manner about the timing of activities and potential for impacts – enquiries and complaints are managed, and a timely response is provided for concerns raised. The plan will include approaches and protocols to: – communicate with potentially affected residents, other community members, businesses and other key stakeholders to provide information about the project, and the likely nature, extent and duration of changes – identify and engage with vulnerable persons that might be affected by the project – communicate information about potential access changes – share information about the project with other regional stakeholders to assist with managing cumulative impacts on local and regional communities.	LMS Energy	Pre-construction, construction, operation, decommissioning

Social impact / benefit	Mitigation measure	Responsibility	Timing
	An enquiries and complaints management systems will be developed, outlined in the CSEP, and implemented during all phases of the project. The complaints management systems will be maintained throughout the construction period and for a minimum of 12-months after construction finishes.	LMS Energy	Pre-construction, construction, operation, decommissioning

7.1 Social impact monitoring

Social impacts will be monitored on an ongoing basis through the implementation of a complaints mechanism and continued stakeholder and community engagement. The management strategies are largely focussed on the construction period, but are adaptive, and would be reviewed and updated as required in response to community and stakeholder feedback.

The overall responsibility for the development, implementation and monitoring of the social impact management strategies will remain with LMS Energy.

Table 7.2 presents the social impact monitoring framework to track the effectiveness of management measures in achieving the performance outcomes, and support identification of corrective actions if targets are not achieved.

Table 7.2 Monitoring framework

Desired outcome	Mitigation/ enhancement	Indicator	Target	Method	Monitoring frequency	Monitoring and reporting responsibility
Local communities are well informed about the project	CSEP	Number of project updates shared with local community and stakeholders	At least monthly updates during lead up to and during construction	LMS Energy and contractor engagement records	Six monthly	LMS Energy Contractor
	CSEP	Time taken to resolve complaints in accordance with complaints handling procedure	100% of complaints will be investigated and 80% of complaints are responded to within 48 hours and resolved to a satisfactory level for the complainant.	LMS Energy and contractor engagement records	Six monthly	LMS Energy Contractor

8. Conclusion

This SIA has provided an assessment of the social impacts of the construction, operation and decommissioning of the project and provides a set of proposed mitigation and enhancement measures. The report satisfies the social impact assessment requirements as identified in the SEARs for the project and has been prepared in accordance with the requirements of the *Social Impact Assessment Guideline* (DPHI, 2025a) and the *Technical Supplement: Social Impact Assessment Guideline for State Significant Projects* (DPHI, 2025b).

The key social benefits of the project with the potential to occur during construction, operation and decommissioning are related to employment and procurement opportunities for local and regional businesses. Additionally, the reduced community exposure to landfill biogas emissions (discussed in Section 6.2.4) is critical to enabling the future conversion of the site into recreational parkland.

The key social impacts of the project with the potential to occur during construction, operation and decommissioning are summarised as follows:

– Temporary reduction to local amenity due to increased noise and dust, and views of construction and decommissioning activities, which has the potential to affect recreational groups in close proximity to the project site.
– Increased traffic volumes during construction and decommissioning, which may lead to disruptions for local communities.
– Views of the project during operation are expected to align with existing landscape features until the closure of the LHRRP where the project may be perceived as reducing visual amenity of the recreational parkland.
– Hazards associated with the development, including operational failures and other hazards outlined in the *Preliminary Hazard Assessment* (GHD, 2025d) comply with relevant risk criteria within the site boundary.

The positive and negative social impacts identified and assessed in this report would be managed and mitigated through a range of measures, including mitigation and management measures recommended in other EIS technical reports.

The mitigation measures identified in response to potential negative social impacts, and to enhance positive impacts would be preparation of a Community Stakeholder Engagement Plan (CSEP). The CSEP will guide community and stakeholder engagement during all phases of the project, supporting consultation with local communities and stakeholders about the project and potential impacts.

With appropriate mitigations and ongoing engagement via the CSEP, the project can be delivered in a way that minimises social impacts, enhances local benefits, and aligns with broader community and sustainability objectives.

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Appendices

Appendix A

SIA review questions

These review questions confirm that the requirements of the SIA Guideline (DPHI, 2025a) have been fulfilled when considering the scale of social impacts of the project.

General	
1. Does the lead author meet the qualification and experience requirements?	Yes – refer to section 1.5
2. Has the lead author provided a signed declaration?	Yes – refer to section 1.5
3. Would a reasonable person judge the SIA report to be impartial, transparent and suitably rigorous given the nature of the project?	Yes – The SIA has been prepared by social research and SIA specialists with proven experience in SIA. The SIA has been prepared using proven social science research methods relevant to the nature of the project.
Projects social locality and social baseline	
4. Does the SIA report identify and describe all the different social groups that may be affected by the project?	Yes – section 5 provides a description of the social locality, including the different social groups who may be affected by the project.
5. Does the SIA report identify and describe all the built or natural features that have value or importance for people, and explain why people value those features?	Yes – section 5 provides a description of built or natural features that have value for people in the social locality, as relevant to the scope of the assessment.
6. Does the SIA report identify and describe historical, current, and expected social trends or social changes for people in the locality, including their experiences with this project and other major development projects?	Yes – section 5 describes historical, current and expected social trends or social changes for people in the social locality, as relevant to the scope of the assessment. Section 4 reports findings from consultation which includes local stakeholders' concerns about this project and other major development projects in the region.
7. Does the social baseline study include appropriate justification for each element, and provide evidence that the elements reflect both relevant literature and the diversity of views and likely experiences?	Yes – the elements and indicators discussed in section 5 (the social baseline) are justified in the SIA scoping exercise (see section 2.1). Section 5 has been informed by relevant literature and data as referenced throughout. The EIS and SIA consultation activities reported in section 4 and throughout sections 5 to 7 sought to understand the views of a diverse range of local stakeholders, and how they expect to be affected by the project.
8. Does the social baseline study demonstrate social-science research methods and explain any significant methodological or data limitations?	Yes – section 2 describes the SIA methodology including the social science research methods implemented, and the data limitations and explained in section 1.6.
Identification and description of social impacts	
9. Does the SIA report adequately describe likely social impacts from the perspectives of how people may experience them, and explain the research used to identify them? When undertaken as a part of SIA scoping and initial assessment, has the plan for the SIA report been detailed?	Yes – sections 6, 7 and 8 describes the potential social impacts of the project, including the concerns of local communities based on outcomes of consultation activities described in section 4. Section 2.1 presents the SIA scoping exercise, which justifies the focus areas for the social baseline (section 5) and assessment of impacts (sections 6 and 7).
10. Does the SIA report apply the precautionary principle to identifying social impacts, and consider how they may be experienced differently by different people and groups?	Yes – sections 6 to 7 describe the potential social impacts of the project on local communities and stakeholders, and considers how different groups in the community, particularly vulnerable community members, may experience the impacts differently.
11. Does the SIA report describe how the preliminary analysis influenced project design and EIS engagement strategy?	Outcomes from the SIA consultation activities (section 4) informed the approach to EIS consultation. Section 4.3 describes how consultation findings influenced project design.
Community engagement	
12. Were the extent and nature of engagement activities appropriate and sufficient to canvass all relevant views, including those of vulnerable or marginalised groups?	Yes – the SIA consultation activities (section 4.2) were planned to target stakeholders relevant to the scope of the assessment and key social issues. The EIS consultation activities (section 4.1) sought inputs from a broader range of stakeholders.

13. How have the views, concerns and insights of affected and interested people influenced both the project design and each element of the SIA report?	Consultation findings have informed the social baseline (section 5), impact identification and assessment (section 6) and identification of mitigation measures (section 7). Section 4.3 describes how consultation findings influenced project design.
Predicting and analysing social impacts	
14. Does the SIA report impartially focus on the most important social impacts to people at all stages of the project, without any omissions or misrepresentations?	In line with the principles for SIA of being 'impartial' and 'inclusive' the SIA focuses on the concerns expressed by stakeholders and communities during SIA and EIS consultation activities (reported in section 4).
15. Does the SIA report analyse the distribution of both positive and negative social impacts, and identify who will benefit and who will lose from the project?	Yes – Table 6.1 and Table 7.1 identify positive and negative impacts and who is affected.
16. Does the SIA report identify its assumptions, and include sensitivity analysis and alternative scenarios? (including 'worst-case' and 'no project' scenarios where relevant)	Yes – sensitivity analysis is presented as relevant throughout sections 6 and 7. Consideration of alternatives is discussed in Section 2.7.2 of the EIS.
Evaluating significance	
17. Do the evaluations of significance of social impacts impartially represent how people in each identified social group can expect to experience the project, including any cumulative effects?	Yes – sections 6 and 7 recognise that different groups in the community may experience impacts differently as relevant. Cumulative impacts are discussed in section 7.
18. Are the evaluations of significance disaggregated to consider the likely different experiences for different people or groups, especially vulnerable groups?	Yes – the evaluations of significance in sections 6 and 7 consider the different experiences of different groups, including vulnerable groups, as relevant to each impact.
Responses, monitoring and management	
19. Does the SIA report propose responses that are tangible, deliverable, likely to be durably effective, directly related to the respective impact(s) and adequately delegated and resourced?	Yes – Table 7.1 demonstrates how the recommended social impact mitigation and enhancement measures directly respond to the impacts and benefits identified in the SIA, along with the residual impact rating based on their effective implementation. Section 7 provides more detail about the recommended social impact mitigation measures, who is responsible, and how they will be monitored and measured over time.
20. Does the SIA report demonstrate how people can be confident that social impacts will be monitored and reported in ways that are reliable, effective and trustworthy?	Yes – section 7 describes the approach to monitoring and reporting of social impact management.
21. Does the SIA report demonstrate how the proponent will adaptively manage social impacts and respond to unanticipated events, breaches, grievances and non-compliance?	Yes – section 7 describes the approach to adaptive management in response to complaints.