YANCOAL
兖煤澳大利亚有限公司

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APPENDIX L

Social Impact Assessment

Stratford Renewable Energy Hub Environmental Impact Statement

Social Impact Assessment

Stratford Renewable Energy Hub

Yancoal Australia Limited

July 2024

AIGIS GROUP

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Abbreviations

%	percent
ABS	Australian Bureau of Statistics
ACHA	Aboriginal Cultural Heritage Assessment
AEMO	Australian Energy Market Operator
AHURI	Australian Housing and Urban Research Institute
AIS	Asset of Intergenerational Significance
AMM	avoidance, management and mitigation
AWC	Australian Wildlife Conservancy
BESS	Battery Energy Storage System
BWNG	Bucketts Way Neighbourhood Group
CCC	Community Consultative Committee
CCS	Climate Change Strategy
Cth DCCEEW	Commonwealth Department of Climate Change, Energy, the Environment and Water
CEO	Chief Executive Officer
CEMP	Construction Environmental Management Plan
COP21	United Nations Climate Change Conference
CSIRO	Commonwealth Scientific and Industrial Research Organisation
CWAS	Construction Workforce Accommodation Strategy
DC	direct current
DCM	Duralie Coal Mine
DCPL	Duralie Coal Pty Ltd
DEO	Destination Experience Officer (MCC)
DIDO	drive-in drive-out
DPHI	Department of Planning, Housing and Infrastructure (NSW)
DPIE	(Former) Department of Planning, Industry and Environment (NSW)
DRNSW	Department of Regional NSW
EII Act	*Electricity Infrastructure Investment Act 2020*
EIS	Environmental Impact Statement
ETL	Electricity Transmission Line
FAQ	Frequently Asked Question
GBC	Gloucester Business Chamber
GCHS	Gloucester Community Health Service
GEG	Gloucester Environment Group
GVIC	Gloucester Visitor Information Centre
GWFPAC	Gloucester Worimi First Peoples' Aboriginal Corporation
ha	hectares
Hannaford's	Hannaford Stock and Land Australia
HNELHD	Hunter New England Local Health District
HRP	*Hunter Regional Plan 2041*
ICCM	International Council on Mining and Metals
IEO	Index of Education and Occupation (ABS SEIFA)
IER	Index of Economic Resources
IRSAD	Index of Relative Socioeconomic Advantage and Disadvantage
IRSD	Index of Relative Socioeconomic Disadvantage
km	kilometres
km^2	square kilometres

kV	kilovolt
kWh	kilowatt-hour
LALC	Local Aboriginal Land Council
LDS	Long Duration Storage
LGA	Local Government Area
MCC	MidCoast Council
MD	Managing Director
MEDD	Manager, Economic and Destination Development (MCC)
MW	megawatt
MWh	megawatt hours
NDC	Nationally Determined Contribution
NEM	National Electricity Market
NPWS	National Parks and Wildlife Service (NSW)
NSW	New South Wales
NSW DCCEEW	New South Wales Department of Climate Change, Energy, the Environment and Water
NSWES	NSW Electricity Strategy
OEH	Office of Environment and Heritage
PC	Productivity Commission
PHES	Pumped Hydro Energy Storage
PMLU	post-mining land use
PPA	Power Purchase Agreement (MCC)
PV	photovoltaic
REDS	Regional Economic Development Strategy
SA2	Statistical Area Level 2 (ABS)
SA4	Statistical Area Level 4
SALM	Small Area Labour Markets (Jobs and Skills Australia)
SCPL	Stratford Coal Pty Limited
SEARs	Secretary's Environmental Assessment Requirements
SIA	Social Impact Assessment
SIAG	Social Impact Assessment Guideline for State Significant Projects (DPHI)
SIMT	Social Impact Management Toolbox for State Significant Projects (DPHI)
SEIFA	Socioeconomic Indexes for Areas (ABS)
SMC	Stratford Mining Complex
SREH	Stratford Renewable Energy Hub
UEG	Undertaking Engagement Guidelines for State Significant Projects (DPHI)
UNFCCC	United Nations Framework Convention on Climate Change
VRE	variable renewable energy
Yancoal	Yancoal Australia Limited

Executive Summary

ES1- Introduction (SIA Section 1)

This Social Impact Assessment (SIA) reports on the potential social impacts of the development of the Stratford Renewable Energy Hub (SREH) (the Project). The SIA forms part of the Environmental Impact Statement (EIS) for the Project.

A summary description of the Project is included at Section 1.2 of the SIA. Full Project detail is provided in the Project EIS. Briefly, the Project involves the construction and operation of a Pumped Hydro Energy Storage (PHES) system with supporting infrastructure, which includes a 'behind the meter' solar farm to provide power for the PHES system. The PHES would add generation capacity to the National Electricity Market (NEM), which requires firming technologies such as the PHES to support the future resilience and integrity of the NEM.

Secretary's Environmental Assessment Requirements (SEARs) issued by the Department of Planning, Housing and Infrastructure (DPHI) for the Project include the following relevant specific requirements:

- *An assessment of the social impacts of the project in accordance with Social Impact Assessment Guideline (DPIE[1], 2021), including impacts on:*
  - *the locality;*
  - *the demand for infrastructure and services in the Mid Coast local government area, including consideration of construction workforce accommodation; and*
  - *users of nearby National Parks and Reserves (including The Glen Nature Reserve), Conservation Areas.*

The SIA and supporting stakeholder engagement program have also been developed to comply with the requirements of DPHI's suite of guidelines and supporting material for state significant projects, including:

- the *Social Impact Assessment Guideline for State Significant Projects* (SIAG) (February 2023).
- SIAG *Technical Supplement* (February 2023).
- *State Significant Infrastructure Guidelines* (October 2022).
- *Social Impact Management Toolbox for State Significant Projects* (SIMT) (February 2023).

[1] Department of Planning, Infrastructure and Environment (DPIE), now DPHI.

ES2 – Stakeholder engagement (SIA Section 3)

ES2.1 Summary of stakeholder engagement program

A summary of the stakeholder engagement program conducted for the Project is presented in Table ES1.

Table ES1: SREH Engagement program

Stakeholder group	Engagement method	Scheduling
Stratford Coal Pty Ltd (SCPL) workforce	Onsite meetings	Since December 2022
All	Publishing and distributing Newsletter Fact Sheets	Since December 2022
All	Publishing Scoping Report	November 2023
Stratford community	Community information session	25 March 2024
Gloucester community	Community information session	26 March 2024
Communities/public	Online survey	13 March – 29 April
Representative groups, key service providers etc.	Direct contact	1 May – 16 May
Regulatory agencies etc.	Company/technical specialist engagement	Throughout Project

ES2.2 Summary of stakeholder engagement outcomes

A summary of the matters of greatest interest to stakeholders identified during the engagement program are summarised in Table ES2.

Table ES2: Summary of perceived positive and negative impacts

Perceived positive aspects of the Project
• Support for renewable energy projects in the Gloucester Valley. • Construction stage workforce (positive effects on local businesses and service providers). • Operations stage workforce (positive permanent increase and positive periodic additional increases in effects on local businesses). • Positive economic impacts of Yancoal's investment in the region. • Yancoal/SPCL should maintain communication with the community in relation to the Project. • Beneficial reuse of the Stratford Mining Complex (SMC) site. • Contribution to NSW/NEM supply and system stability. • Contribution to meeting NSW Government emissions reduction targets. • Reduction in energy costs across NSW/NEM.
Perceived negative aspects of/ concerns over the Project
• Construction stage workforce (increased demand for and pressure on housing). • Concerns with engagement process. • Construction stage workforce (increased pressure on accommodation detracting from tourist activity). • Construction stage workforce (temporary change in demographic structure of the population).
• Solar farm (visual impacts). • Solar farm (maintenance water usage and lack of agri-solar use). • Management of waste from the solar farm.

- Concerns for impacts on biodiversity (particularly construction of the upper reservoir and subsequent inundation).
- Concern for impacts on Aboriginal cultural heritage and related community impacts.
- Concern for potential overspill of upper reservoir/flooding.
- Construction stage traffic (The Bucketts Way).
- Solar farm (exclusion of alternative land uses, particularly agricultural use).

ES2.3 Summary of implications for social impact assessment

In summary, the implications of the engagement outcomes for the assessment of social impacts are:

- There is evidence that parts of the community understand that there is some level of distributive disjuncture relating to the Project, to the extent that the purposive benefit of the Project (contribution of electricity into the NEM) would be broadly distributed across the NEM. Conversely, potential negative impacts such as those noted in Table ES2 are more localised.
- The engagement results indicate that there is reasonably broad support for the Project. This is best exemplified by the overall positive view expressed in the online survey and by key service providers, such as the hospital, whose resources may be most called upon, particularly during Project construction.
- There are several matters of concern to the local community. The proposed solar farm presents several concerns to the community, the most important of these being the potential visual impacts. The impacts of the large temporary construction workforce is also a matter of interest, however there are both apprehended positive and negative effects associated with this stage of the Project.

ES2.4 Responses to stakeholder engagement outcomes

The engagement process with the community and other stakeholders contributed to several responses being factored into Project planning, with the aim of mitigating perceived impacts. These included:

- The removal of the section of the solar farm on the western side of The Bucketts Way when compared to the Scoping Report.
- The removal of one section of the solar farm that was near to The Bucketts Way (on the eastern side) which may have been particularly visible.
- Proposed development of a Construction Workforce Accommodation Strategy to manage effects during this stage of the Project.
- Development of plans for providing information on the Project to the community on a continuing basis.

ES3 - Renewable energy and the perceptions of the general population (SIA Section 3.10)

The Project is designed to increase overall supply and stability of the NEM. This major form of Project benefit would therefore be widely distributed. On this basis, an understanding of broader community attitudes to renewable energy infrastructure was obtained from the 2024 CSIRO report '*Understanding Australian attitudes toward the renewable energy transition*'.

CSIRO's summary of its findings on the public's views on renewable energy infrastructure is reproduced below:
'*There was a spread of attitudes towards the idea of living near renewable energy infrastructure but most people were in the middle.*

When considering a hypothetical scenario, more than 80% of Australians would, at least, tolerate living within 10 kms of renewable energy infrastructure. Most Australians do not have overly positive nor negative feelings associated with their attitude towards this infrastructure, including those who would tolerate it. At this stage of the energy transition, many Australians hold generally moderate attitudes towards and moderate feelings about living near renewable energy infrastructure. This suggests a broad willingness to support, or at least tolerate, the development of solar farms, onshore and offshore windfarms, and transmission infrastructure'[2].

Some limitations on the comparability of CSIRO outcomes with engagement outcomes for the Project are discussed in Section 3.10.2 of the SIA. Acknowledging these limitations, a comparison of benefits and impacts identified through the CSIRO survey, and the extent to which these may apply to the Project and the Gloucester region community is presented in Table ES3.

Table ES3: Comparison of CSIRO and Project matters of interest

Perceived local and wider benefits – CSIRO report	***Identified for SREH***
Local benefits	
Local employment	Yes
Opportunities for young people (e.g. under 25 years) to stay in the region	Yes
Corporate support for local community activities	No
Additional local community services, facilities and infrastructure	No
Overall this development would bring significant benefits to the local community	Yes
Creating shared value with property improvements for impacted landowners	No
Cheaper electricity for local industries	Yes
Cheaper electricity for local residents	Yes
Perceived Local and wider benefits – CSIRO report	***Identified for SREH***
Wider benefits	
Increasing energy supply in your state/territory	Yes
Improving energy capacity and reliability in the wider region	Yes

[2] CSIRO 2024: Understanding Australian attitudes towards the renewable energy transition – Snapshot.

Table ES3: Comparison of CSIRO and Project matters of interest	
Boosting the wider state/territory economy	Yes
Making the wider region more attractive to new business and industry	Yes
Overall this development would contribute to benefits beyond your community	Yes
Helping to reduce energy prices in your state/territory	Yes
Possible impacts living near renewable energy infrastructure – CSIRO report	***Identified for SREH***
Changes to the local natural environment	Yes
Waste created when are decommissioned or reach their end of life	Yes
The health and wellbeing of nearby residents	Yes
Devaluing nearby properties	Yes
Overall concern about potential negative impacts	Yes
Less land available for farming and other land uses	Yes
Reducing the visual attractiveness of the local landscape	Yes
Increased traffic on roads during construction	Yes
Community division over the development	No
Dust and noise pollution during construction	Yes
Fire risks with additional transmission line developments	No
Disruption of cultural connections for First Nations peoples	Yes
Changes to local weather patterns around the development	No

ES4 – Project strategic context (SIA Section 4)

The Project is consistent with the objectives and commitments of Commonwealth, State and Local governments with respect to:

- Greenhouse gas emissions reduction targets.
- Renewable energy infrastructure investment targets.
- Development of more energy storage to prevent system reliability/ stability problems.
- Beneficial post-mining land use.
- Regional economic development.

A detailed analysis of relevant strategic policy is presented in Section 4 of the SIA.

ES5 – Project social locality and social baseline (SIA Section 5 & Annexure 7)

ES5.1 Social locality

DPHI describes the relationship between the social locality and social baseline as:
"*The social baseline study considers social impacts in the 'social locality'. There is no prescribed meaning or fixed, predefined geographic boundary (e.g. the local suburb, or 'within 500m') to a social locality; rather, the social locality should be construed for each project, depending on its nature and its impacts. The term 'social locality' is similar to 'area of social influence' that is commonly used in SIA practice.*

Identifying the social locality begins with understanding the nature of the project, the characteristics of affected communities and how positive and negative impacts may be reasonably perceived or experienced by different people" (DPHI SIAG 2023:16).

The nature of the Project is such that there are likely to be various distributional effects across several populations forming the immediate and broader social localities. As energy generation infrastructure that would deliver energy into the NEM, the Project is assessed as being a project with several elements to its social locality. In summary these populations are:

- The immediate social locality is defined as the Gloucester Statistical Area Level 2 (SA2). People in this area may directly experience negative impacts from the construction and operation of the Project, such as visual impacts and noise, and positive impacts, such as local employment and business activity for example.
- The surrounding social locality is defined as the MidCoast Council (MCC) Local Government Area (LGA). People in this larger area may benefit from impacts such as employment opportunities and additional business activity. Generally however, these people may not be frequently exposed to direct, potentially negative effects.
- The Mid-North Coast Statistical Area Level 4 (SA4) was also assessed as an element of the broader social locality. The SA4 provides a broader regional context that may have particular relevance with respect to, for example, the labour market from which employees may be drawn for the Project.
- NSW is assumed as the social locality at the broadest level. This is based on the electricity produced by the Project being delivered into the NEM. In practice, the NEM '*supplies 9 million customers'* (around one-third of the country's population) and services '*the six eastern and southern states and territories and delivers around 80% of all electricity consumption in Australia*'[3]. As the electricity produced would be delivered into the network, it can be validly characterised as being indiscernible to the population in the diverse areas across the NEM. NSW has been adopted as a proxy broad social locality for all states and territories covered by the NEM.
- The NSW population also serves as a proxy for people who may visit the area and be temporarily affected by impacts.

ES5.2 Social baseline

The social baseline for the Project is predicated on DPHI's description, being: '*The social baseline study describes the social context without the project. It documents the existing social environment, conditions and trends relevant to the impacts identified*' (DPHI SIAG 2023:21).

ES5.2.1 Stratford Mining Complex activity and the social baseline

In addition to the existing populations across the various elements of the social locality, post-mining decommissioning and rehabilitation activity may be continuing simultaneously with development of the Project on the Stratford Mining Complex (SMC) site. As such, this is considered as forming part of the baseline conditions into which the Project would be introduced. A summary of the contributions of work on the SMC site to the Project social baseline is as follows:

- Employment levels: Initially, a consistent employee level is expected to continue from the active mining phase through the decommissioning and rehabilitation period, however this will inevitably decline.

[3] https://www.energy.gov.au/government-priorities/energy-markets/national-electricity-market-nem

- Local commercial interactions: Initially, interaction with local business is expected to be consistent through the rehabilitation phase. Business done with local suppliers, labour hire and possibly other local businesses are expected to continue with minor fluctuations, however this will inevitably decline.
- Operational impacts of decommissioning and rehabilitation activity on the site, which, as has been the case during the productive stages of mine operations, are most likely to be apparent to nearby land occupants.

ES5.2.2 Summary of population demographic features

The SIA includes detailed demographic data (SIA Annexure 7) and summaries of the baseline characteristics of populations in the social localities (SIA Section 5). A summary of the most defining demographic characteristics is as follows:

- The local (SA2) and regional (MCC LGA and Mid North Coast SA4) populations are substantially older than the general NSW population. This can be summarised by comparing median ages, which are 55 years (SA2), 54 years (MCC LGA), 50 years (SA4) and 39 years (NSW). There are various other characteristics that reinforce this. For example, local and regional population age distributions (skewed towards older age groups), labour force status (higher proportions of people not in the labour force) and housing tenure (higher levels of ownership) are each consistent with older populations, when compared with these measures for NSW.
- Population growth over the DPHI forecast period 2021-2041 is projected to be lower at the SA2 (2.8%), LGA (14.4%), and SA4 (12.7%) levels than for NSW (20.9%). This has implications for future development of the local and regional areas and emphasises the importance of retaining employment generating enterprises in the local and regional economies.
- Over the same period (2021-2041) the working age population (15-64 years) is projected to decline in the SA2 (-6.9%) and to increase more modestly in the MCC LGA (8.8%) and SA4 (5.3%) than for the state as a whole (NSW, 15.9%). As is the case with the total population, retaining employment opportunities in the local and regional areas is an important contributor to socioeconomic stability, which supports demand and the ongoing provision of the services required to meet this demand.
- Notwithstanding relatively modest local and regional population projections, implied dwelling demand is projected to increase for all local and regional areas and NSW (SA2 (11.9%), LGA (20.8%), SA4 (18.8%) and NSW (26.4%)). A key driver of this at the local and regional levels is progressive declines in household size (i.e. less people per household in a growing population will require more housing). As energy generation infrastructure, the Project would contribute to managing the likely increases in energy demand associated with servicing the increased number of dwellings projected regionally and across NSW, as part of the NEM.

ES5.2.3 Summary of social baseline implications

The local (SA2) community is particularly vulnerable to significant changes in its socioeconomic circumstances, such as the closure of Yancoal's SMC and Duralie Coal Mine. The potential for limited population expansion and continuing population ageing may exacerbate these vulnerabilities. The larger regional populations (LGA and SA4) are considered as being unlikely to be materially impacted by the closures, nor by decommissioning and rehabilitation works on the two sites.

The decommissioning and rehabilitation programs for the SMC and Duralie Coal Mine may coincide with development of the Project. Construction of the Project would substantially increase activity for a period of approximately four years. Subsequent operation of the Project would support continuing employment and commercial activity, but at substantially lower levels than for mining. Nevertheless, in the context of a relatively small regional area, the Project would make a contribution to maintaining adequate levels of local demand to support ongoing social and economic sustainability.

ES6 – Social impact prediction and assessment

Table ES4 summarises the positive and negative impacts predicted to result from the Project. The table also summarises the assessment of the predicted impacts against the categories of social impact identified in the SIAG. The detailed discussion of each of the impacts is included in Section 7.3 of the SIA.

ES6.1 Summary of predicted impacts

The assessments summarised in Table ES4 are based on consideration of the views of the various stakeholders (SIA Section 3), the strategic context of the Project (SIA Section 4) and the baseline social characteristics of the several social locality elements.

Table ES4: Predicted impacts and assessed impact categories

Support for renewable energy projects in the Gloucester Valley/SREH	Surroundings; culture.
Solar farm (visual impacts)	Community; culture; health and wellbeing; surroundings.
Solar farm (exclusion of alternative land uses)	Surroundings; livelihoods; decision-making systems.
Solar farm (waste management – solar panel refuse)	Surroundings.
Solar farm (maintenance requirements)	Accessibility; surroundings; livelihoods.
Construction stage workforce (effects on housing)	Accessibility; livelihoods.
Construction stage workforce (effects on accommodation and tourist activity)	Accessibility; livelihoods.
Construction stage workforce (effects on local businesses and service providers)	Way of life; accessibility; health and wellbeing; livelihoods.
Construction stage workforce (temporary change in demographic structure of the population)	Way of life; community; health and wellbeing; surroundings.
Operations stage workforce (permanent and periodic)	Community; accessibility; livelihoods.
Impacts of Yancoal's investment in the region	Way of life; community; livelihoods.
Aboriginal cultural heritage impacts and related community impacts	Community; culture; health and wellbeing.
Biodiversity impacts (particularly construction of the upper reservoir and subsequent inundation)	Community; culture; health and wellbeing; surroundings.
Potential overspill of upper reservoir/flooding	Surroundings.
Construction stage traffic (The Bucketts Way)	Way of life; accessibility.
Beneficial reuse of the SMC site	Community; surroundings.
Concerns with engagement process	Decision-making systems.
Yancoal/SPCL should maintain communication with the community in relation to the Project	Decision-making systems.
Contribution to NSW/NEM supply and system stability	Accessibility.
Contribution to meeting NSW Government emissions reduction targets	Accessibility.

ES6.2 Residual and cumulative impacts

ES6.2.1 Residual impacts

From the perspective of local and regional impacts, the Project would effectively become a permanent feature of the Gloucester region. Accordingly, a number of the positive and negative impacts identified and assessed in this SIA would entail long term residual impacts.

Potential positive or beneficial residual impacts are summarised as:

- Additional electricity generation capacity.
- Permanent contribution to the transition to renewable energy sources.
- Permanent and regular periodic (e.g. maintenance) employment.
- Potential commercial activity with locally and regionally based goods and services providers.

Potential negative residual impacts are summarised as:

- The 'opportunity cost' of foregone alternative uses of the land, particularly the area associated with the solar farm.
- Visual effects of the solar farm.
- Biodiversity issues, such as the loss of vegetation and habitat relating to upper reservoir construction.
- The potential for impacts on Aboriginal cultural heritage sites and/or items resulting from Project.

These potential impacts would be addressed by the enhancement and mitigation approaches proposed in Section 8 of the SIA (Section ES7 below).

ES6.2.2 Cumulative impacts

The most enduring cumulative impact of the Project of any potential significance from the localised perspective is assessed as being the additional land clearing required, particularly for the upper reservoir construction. This entails potential cumulative biodiversity impacts compared with the baseline conditions and may also require management of potential Aboriginal cultural heritage effects.

From the broader social locality perspective (defined as MCC LGA, SA4, NSW) the cumulative impact of the Project is assessed as being positive overall. This is primarily as a result of the additional electricity generation and storage capacity that the Project would contribute to the NEM.

ES7- Social impact enhancement, mitigation and residual impacts (SIA Section 7, Section 8, Annexure 5 & Annexure 6).

ES7.1 Impact significance

The impact prediction and assessment findings reported in ES6 are one element in an iterative process of assessing the significance of impacts. As noted in ES6, a range of primary and secondary data about the Project and its contexts were relied on in producing the impact predictions.

Because of the scale of the Project, a detailed, stepwise process of assessing Project impacts was undertaken. As noted above, the process was iterative, and the various elements were revisited throughout development of the SIA, as relevant information was accumulated. As a result of this process, the following material contributed to the assessments made in the SIA:

- Preliminary scoping stage, including engagement planning.
- Application of DPHI scoping tool (MS Excel based document, can be provided on DPHI request).
- Assessments of impacts based on technical reports for the following potential impacts:
    - visual impacts (solar farm);
    - waste management (particularly relating to the solar farm);
    - biodiversity impacts; and
    - Aboriginal cultural heritage impacts.
- Proposed impact management structures, including the Construction Environmental Management Plan and the Construction Workforce Accommodation Strategy.
- Risk identification based on social impact and stakeholder distribution (SIA Annexure 5, Table A5.1).
- Assessment of social impact distribution, SEARs requirements (SIA Annexure 5, Table A5.2).
- Impact assessment and prediction – discussion (SIA Section 7.3, Annexure 6, Table A6.1).
- Social impact rating summary (SIA Annexure 6, Table A6.1).
- Summary social impact risk assessment – SREH (SIA Annexure 6, Table A6.2).

The DPHI SIAG Technical Supplement structure is summarised in Tables ES5 to ES7 and forms the basis of the summary impact risk assessment provided as Table ES8.

While the DPHI SIAG Technical Supplement defines likelihood and magnitude for social impacts, it does not define the ‘low’, ‘medium’, ‘high’ and ‘very high’ social impact significance ratings.

Consistent with other Yancoal risk assessments, social impacts with a significance of ‘low’ and ‘medium’ are considered tolerable.

In general, unmitigated negative social impacts with a significance of ‘high’ or ‘very high’ indicated that Project-specific social management is required to be implemented, which if successfully implemented by Yancoal, would be aimed at reducing the significance of the negative social impact to ‘low’ or ‘moderate’.

Table ES8 shows both pre- and post-mitigation assessments, based on the assessment process identified above.

ES7.2 Project enhancement and mitigation features

ES7.2.1 Physical project elements

Features of the Project that are advanced as enhancement and mitigation features include:

Avoidance and impact minimisation measures for the Project would be finalised in the EIS, including:

- *Beneficial re-use of water contained within mine voids to initially fill and to top-up the PHES reservoir when required, avoiding reliance on external water sources.*
- *Management of water within the PHES, to prevent uncontrolled discharge to surface drainages and to minimise seepage to groundwater.*
- *Controlled release of water from the PHES, as required to maintain suitable freeboard in the upper and lower reservoirs during periods of prolonged wet weather.*
- *Use of the existing SMC access road for construction and operational traffic entering the site via The Bucketts Way, to minimise impacts to other traffic users.*
- *Maximising the use of existing SMC infrastructure for carparks, laydown areas, internal access roads, etc. to minimise additional disturbance associated with the Project.*
- *Upgrade of existing access tracks to facilitate construction of the upper reservoir to avoid constructing new tracks.*
- *Use of a tunnelled waterway rather than above-ground pipes, to minimise disturbance and visual impacts.*
- *Vegetative screening as required to minimise visual impacts along The Bucketts Way and any significantly affected private residences.*

The Project would also include development of a biodiversity offset strategy as per the NSW Biodiversity Conservation Act 2016 *(BC Act).* (Yancoal 2023:9).

In addition to the existing SMC infrastructure identified above, the Project would also use:

- water pipelines, water management system, such as sediment and erosion controls;
- access roads;
- office facilities;
- services and utilities; and
- 33 kV/11 kV power supply and communications infrastructure.

The Project would also involve the upgrade of the existing Stratford East Dam for the lower reservoir and the use of recycled onsite water for solar farm maintenance/cleaning.

Along with these initial Project enhancement and mitigation features, Project engagement has also resulted in:

- Removal of the section of the solar farm proposed on the western side of The Bucketts Way, with the aim of reducing the overall visual impact.
- Following additional stakeholder engagement, an area of the solar farm adjacent to The Bucketts Way (on the eastern side) with higher visibility was also removed from the Project. Vegetative screening is now proposed in this area of the solar farm originally proposed adjacent to The Bucketts Way (on the eastern side), to further mitigate visual impact.

ES7.2.2 Project management approaches

Management approaches that are recommended to be considered to enhance, benefit and contribute to social impact mitigation for the Project include:

- Ongoing community engagement including during the approval process and both the construction and operational stages of the Project.
- Development and implementation of a Construction Workforce Accommodation Strategy.
- Development and implementation of a Construction Environmental Management Plan, incorporating a Construction Traffic Management Subplan (e.g. for oversize vehicle movements).

Table ES5: 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 ES6: Defining magnitude levels for social impacts

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% 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, for a reasonably short time, for a small number of people who are generally adaptable and not vulnerable.
Minimal	Little noticeable change experienced by people in the locality.

Table ES7: 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	Medium	Medium	High	High
D	Unlikely	Low	Low	Medium	Medium	High
E	Very unlikely	Low	Low	Low	Medium	Medium

Table ES8: Summary social impact risk assessment - SREH				
Project activity	**Baseline assessment**	**With project, pre-AMM**	**Post AMM effect rating/ positive or negative**	
Support for renewable energy projects in the Gloucester Valley	**C2**	**A3**	**A3**	
Construction stage workforce (temporary demand increase in trade for local businesses and service providers)	**D1**	**A3**	**A3**	
Operations stage workforce (permanent economic and social activity and periodic additional economic activity)	**D1**	**A3**	**A3**	
Impacts of Yancoal's investment in the region	**C2**	**B3**	**B3**	
Yancoal/SPCL should maintain communication with the community in relation to the Project	**A1**	**A2**	**A2**	
Beneficial reuse of the SMC site	**C3**	**A3**	**A3**	
Contribution to NSW/NEM supply and system stability	**E1**	**A2**	**A2**	
Contribution to meeting NSW Government emissions reduction targets	**E1**	**A2**	**A2**	
General support for collective action to mitigate effects of climate change (CSIRO etc.)	**A2**	**A2**	**A2**	
Construction stage workforce (temporary regular high occupancy levels and income for accommodation providers)	**C2**	**B2**	**B2**	
Construction stage workforce demographic effects (few reported negative impacts for past projects)	**D1**	**A1**	**C1**	
Engagement with GWFPAC, RAPs etc. to identify and preserve cultural heritage items	**C2**	**C3**	**B3**	
Solar farm land use will create broad distribution of benefit rather than benefit accruing to one land occupant	**E1**	**A2**	**A2**	
Recycling and beneficial reuse of solar farm waste (e.g., PV panel materials/componentry refuse)	**E1**	**A3**	**A2**	
Construction stage workforce (potential temporary increase in demand for and pressure on housing)	**C2**	**A3**	**A2**	
Construction stage workforce may temporarily increase demand for services (e.g., medical), which may impact community access.	**C2**	**B3**	**C3**	
Construction stage workforce (temporarily increased pressure on accommodation detracting from tourist activity)	**C1**	**A3**	**C3**	
Construction stage workforce (temporary change in demographic structure of the population)	**C1**	**B2**	**B2**	
Concerns with engagement process	**D1**	**A2**	**C2**	
			Positive effect	
			Negative effect	

Project activity	Baseline assessment	With project, pre-AMM	Post AMM effect rating/ positive or negative	
Solar farm (visual impacts). Impacts assessed in VIA as 'low' or 'very low' at all private residences. Impacts assessed as 'low' or 'very low' from Bucketts Way with planned additional screening.	**E1**	**A3**	**A2**	
Solar farm (maintenance water usage, site management (weeds etc.) and lack of agri-solar use)	**E1**	**A3**	**A2**	
Solar farm (waste management)	**E1**	**A3**	**A2**	
Concerns for impacts on biodiversity (particularly construction of the upper reservoir and inundation)	**E1**	**A3**	**A2**	
Concerns for Aboriginal cultural heritage impacts and related community impacts	**C2**	**C3**	**C2**	
Potential overspill of upper reservoir/flooding	**E1**	**C3**	**C2**	
Construction stage traffic (The Bucketts Way)	**C1**	**A3**	**A2**	
Solar farm (exclusion of alternative land uses, particularly agricultural use)	**D1**	**C3**	**C2**	
			Positive effect	
			Negative effect	

ES8: Conclusions

ES8.1 Gloucester region

There is general in-principle support for a PHES project on the site within the region. However, there is some concern over the scale of the solar facility to support the PHES.

The second matter of community concern is the potential effect of the relatively large temporary workforce coming into the area over the construction stage. Despite general recognition of the possible impacts that this would have in terms of demand for local services, and in particular, housing and accommodation, it is concluded that the community has a level of confidence that this matter can be managed appropriately to achieve a positive outcome.

ES8.2 NSW and the NEM

The Project is consistent with the State's commitment to increasing renewable energy supply. It has positive implications for all electricity consumers in NSW and the NEM in terms of service reliability. The negative implications for these broader elements of the social locality are assessed as those relating to the loss of some level of biodiversity and heritage values. It is submitted that at this broader level the materiality of the beneficial contribution is likely to outweigh that of the potential social cost. On balance, the overall social impact of the Project is therefore assessed as being positive at the level of the NSW population.

ES8.3 General conclusion

Considering the overall positive local and broader aspects with the beneficial result of improved energy system outcomes, it is concluded that the Project would achieve a net positive outcome for the entire population of NSW. To minimise local social impacts, a range of management approaches, including continued engagement, have been recommended.

Contents

1 Introductory material

1.1 Purpose of Social Impact Assessment

This Social Impact Assessment (SIA) reports on the potential social impacts of the development of the Stratford Renewable Energy Hub (SREH) (the Project). The SIA forms part of the Environmental Impact Statement (EIS) for the Project. A summary description of the Project is included at Section 1.2 of the SIA. Full Project detail is provided in the EIS.

Based on the nature of the Project, the effects assessed relate to communities in areas immediate to the Project site, and to the broader regional and New South Wales (NSW) communities. An assessment of social impacts was stipulated in the NSW Department of Planning, Housing and Infrastructure (DPHI) Secretary's Environmental Assessment Requirements (SEARs) for the Project. Specifically, the SEARs require:

- *An assessment of the social impacts of the project in accordance with Social Impact Assessment Guideline (DPIE[4], 2021), including impacts on:*
  - *the locality;*
  - *the demand for infrastructure and services in the Mid Coast local government area, including consideration of construction workforce accommodation; and*
  - *users of nearby National Parks and Reserves (including The Glen Nature Reserve), Conservation Areas.*

1.1.1 Scope of SIA

The two specific social impact matters in the SEARs (quoted above) are addressed individually in this SIA. In addition to the specific requirements above, the requirement for assessment of impacts on the locality is interpreted as also being a more general requirement, in relation to which various other matters identified in the SEARs are relevant to the extent that they may impact on people in the locality. These matters are addressed in detail in technical reports stipulated in the SEARs and are assessed for their potential social impacts in this report.

The nature of the Project is such that some impacts are also likely to be more broadly distributed, particularly in regard to the beneficial outcome of generating additional renewable energy. This SIA addresses these distributional aspects and their relative impacts. A scoping process was undertaken that assesses the likely distribution of the matters prescribed in the SEARs. The material on this process is included in Annexure 5 of this SIA.

[4] Now DPHI. DPHI is used in the remainder of the document to generically refer to the former Department of Planning and Environment (DPE) and Department of Planning, Infrastructure and Environment (DPIE).

1.1.2 DPHI SIA Scoping tool

In the context of the information in Section 1.1.1, the DPHI scoping tool has been applied to identify potential Project impacts requiring assessment. A copy of the completed Excel version of the scoping tool can be submitted to DPHI on request, should this be required. The matters included in the scoping tool were based on initial assessments by Project team members. These were then revised and augmented where appropriate, based on the outcomes of the program of community engagement.

1.2 Description of the Project and its context

1.2.1 Introduction to the Project

Yancoal Australia Limited (Yancoal) has been investigating diversification opportunities, including development of renewable energy projects on its existing landholdings. A key diversification opportunity identified by Yancoal is development of the SREH on land associated with the existing Stratford Mining Complex (SMC).

The SREH would be situated on land associated with the existing SMC, located in the Gloucester Valley, approximately 95 kilometres (km) north of Newcastle, NSW (Annexure 2). The SMC is an open cut coal mining operation that is owned and operated by Stratford Coal Pty Ltd (SCPL), a wholly owned subsidiary of Yancoal. Mining operations at the SMC are scheduled to be completed in 2024.

1.2.2 Project Description

The SREH would comprise a Pumped Hydro Energy Storage (PHES) with an indicative capacity of 3.6 gigawatt-hours (GWh) (e.g. 300 megawatts [MW] over 12 hours or 400MW of 9 hours), alongside a photovoltaic (PV) solar farm facility (solar farm). The solar farm would have an indicative capacity of approximately 320 MW alternating current (AC) (equivalent to 375 MW direct current [DC]), to supply a portion of required energy for the PHES.

Collectively, the PHES, the solar farm and associated infrastructure are referred to as 'the Project'.

The Project would include the following activities:

- construction and operation of the PHES, including:
  - construction and operation of a new Upper Reservoir;
  - augmentation of the existing Stratford East Dam to serve as the Lower Reservoir;
  - construction and operation of a tunnelled waterway, which comprises a vertical shaft and inclined headrace tunnel between the Upper Reservoir and powerhouse, and a tailrace tunnel connecting the powerhouse to the Lower Reservoir;
  - construction and operation of an access tunnel which would be used for the waterway construction;

  - construction and operation of an underground powerhouse which would contain two reversible pumps/turbines (approximately 150 MW to 200 MW each);
  - construction and operation of an assembly bay, which would be used for the powerhouse construction, and to service the powerhouse following construction;
- construction and operation of the solar farm to supply approximately 320 MW AC (375 MW DC) electricity to the PHES, with optionality to export electricity to the grid in times of surplus solar generation;
- construction and operation of an on-site electrical substation, to connect the PHES and the solar farm to the electricity transmission line (ETL) network;
- re-alignment of the existing TransGrid 132 kilovolt (kV) ETL that currently traverses the Stratford East Dam to the west of the Lower Reservoir to enable safe construction of the powerhouse;
- use (and upgrades as necessary) of existing SMC internal access tracks/roads, access off The Bucketts Way and other existing SMC infrastructure;
- use of water stored in existing SMC mine voids for initial fill, and as backup water supplies to the PHES during the operation; and
- other associated infrastructure, construction and operational activities.

1.2.3 Base case and alternatives

The baseline situation at the SMC is that production activity has ceased. The SMC is now transitioning into decommissioning and rehabilitation, with this process expected to take approximately four years. Irrespective of progress on the Project, SCPL's overarching rehabilitation obligations to have a safe, stable and non-polluting landform remain and will be carried through to completion.

As is reported in this SIA, there are numerous community views on post-mining use of land associated with the SMC. These range from very low impact residential or agricultural use on appropriate parts of the SMC site, to various industrial uses. Yancoal/SCPL has undertaken detailed analyses of alternative uses of the site. These have taken into account the SMC's post-mining characteristics and the interests of the community in developing the site for use that supports the economic and social interests of the community as it transitions into its post-mining stages.

In proposing the SREH, Yancoal/SCPL has arrived at a land use that contributes to the company's aims with respect to its aspirations for the local area, and which also makes a contribution to the broader population in terms of energy supply and security. This is also consistent with the NSW Government's commitments in respect of the transition to a renewables-based energy system. The strategic context for the Project is detailed further in Section 4 of this SIA.

2 Methodology

This SIA has been prepared to comply with the requirements of DPHI's suite of guidelines and supporting material for state significant projects, including:

- the *Social Impact Assessment Guideline for State Significant Projects* (SIAG) (February 2023);
- the supporting *Technical Supplement* (February 2023); and
- the *State Significant Infrastructure Guidelines* (October 2022).

A reconciliation of the SIA Sections addressing the requirements of the SIAG have been addressed in this SIA is provided in Annexure 3.

The stakeholder engagement activity supporting the SIA has been conducted with reference to the *Undertaking Engagement Guidelines for State Significant Projects* (UEG) (November 2021).

Recommendations for project monitoring and management and impact avoidance, management and mitigation (AMM) in part have reference to the *Social Impact Management Toolbox for State Significant Projects* (SIMT) (February 2023).

This SIA presents qualitative and quantitative data from primary and secondary sources. Primary source data has mainly been gathered from engagement with various stakeholders for the Project. These include local and regional communities and representatives, groups, specific interest groups, and government and other public agencies. Primary stakeholder engagement for the Project has been undertaken in various forms, including online survey, community consultation sessions, one-on-one meetings, and distribution of newsletter fact sheets. Technical specialists' reports are also key primary sources for assessing the specifics of the Project and the potential for aspects of the Project to entail social effects.

Secondary sources include the Australian Bureau of Statistics (ABS) and the DPHI, for example. Information from these sources provides the broader context for the Project. The information and data include demographic profile material, data on the socioeconomic status of the relevant communities and population and other relevant projections data.

The Project necessarily involves some impacts on values that may be particularly important to certain groups within the community. This is most applicable to biodiversity and potential Aboriginal cultural heritage impacts relating to construction of the upper reservoir for the PHES component of the Project. Through the technical specialist assessments completed for the Project, any scientific uncertainties have been minimised to the greatest extent possible, and the Project has adopted the avoid, minimise, mitigate and offset hierarchy. Therefore, while the precautionary principle has been considered, it is not considered to have been triggered for residual impacts associated with the Project.

3 Stakeholder engagement

3.1 Context for approach to engagement

As noted in Section 2, the stakeholder engagement activity supporting the SIA has been conducted with reference to the UEG, in particular:

- Section 2.2, *Proponent-led engagement.*
- Section 3, *Guidance for proponents.*

This section outlines the stakeholder engagement undertaken for the Project and this SIA, and includes the following:

- A summary of stakeholder engagement activity undertaken by SCPL and Yancoal for closure of the SMC, which has formed important context for stakeholder engagement for the Project.
- A description of the preparatory activity undertaken to guide stakeholder engagement for the Project and this SIA.
- An outline of the stakeholder engagement program for this SIA.
- A description of the direct outcomes of stakeholder engagement undertaken for this SIA.
- A description of the community survey undertaken for this SIA.
- A description of additional community information and engagement measures, including newsletter factsheets and electronic engagement collateral.
- A summary of perceived community impacts associated with the Project.
- A description of measures undertaken by Yancoal to respond to stakeholder engagement.
- A description of public perception on renewable energy.

3.2 Previous engagement activity

SCPL and Yancoal have investigated potential socioeconomic consequences of the closure of the SMC and Duralie Coal Mine (DCM) for the Gloucester region in the context of potential post-mining contribution to the regional community and economy.

An important element of that research and reporting was engagement with relevant stakeholders. These included the workforce (via a survey), Community Consultative Committees (CCCs) for both the SMC and DCM, council representatives and representatives of community-based organisations. This engagement activity has served as a preliminary to that required for the Project by initiating conversations with the community about the post-mining socioeconomic environment. Future use of the land associated with the SMC and DCM was a subject of interest during those engagements. This prospectively established contacts with relevant community stakeholders and indicated that the companies were working towards a post-mining transition in the region, including repurposing of the mine sites.

3.3 Preparatory activity

A Social Impact Assessment Engagement Plan was prepared in May 2023 as the initial step in developing a comprehensive and inclusive engagement program for the Project. Detailed planning for engagement commenced in the early stages of the Project.

An important element throughout this process was engagement within the Project team. This involved relevant personnel from Yancoal/SCPL, and contracted Project team personnel. The group worked to refine the Social Impact Assessment Engagement Plan. This particularly involved refinement of the three key, broad parameters of the engagement program, these being:

- the stakeholders to be engaged;
- the appropriate engagement methods for engaging with stakeholders; and
- the appropriate sequencing of engagement activity, with an emphasis on ensuring that the potentially most-affected stakeholders (e.g. the workforce) were engaged first.

The preparatory work also included determining the objectives of the engagement program. These were:

- Inform the community of the Project.
- Describe the process by which the Project has been determined as the preferred post-mining land use (PMLU).
- Canvass the views of the community on the Project.

3.4 Engagement program

The outcome of the process described in Section 3.2 was the development of an engagement program incorporating the considerations and objectives addressed above. The engagement program is summarised in Table 1.

Table 1: SREH Engagement program

Stakeholder group	Engagement method	Scheduling
SCPL workforce	Onsite meetings	Since December 2022
All	Publishing and distributing Newsletter Fact Sheets	Since December 2022
All	Publishing Scoping Report	November 2023
Stratford community	Community information session	25 March 2024
Gloucester community	Community information session	26 March 2024
Communities/public	Online survey	13 March – 29 April
Representative groups, key service providers etc.	Direct contact	1 May – 16 May
Regulatory agencies etc.	Company/technical specialist engagement	Throughout Project

3.5 Direct engagement outcomes

The outcomes of the various direct engagement activities are reported in Section 3.6. Detailed records of the matters raised in specific elements of community engagement are presented as annexures to this SIA. These are indicated in the relevant sections below.

3.5.1 SCPL workforce

The Project has been presented to the workforce during regular updates provided as part of the transition of SMC to operational closure. These briefings have taken place since December 2022. In March 2024, the workforce was advised in relation to the public survey. Employees were encouraged to participate in the survey, at their individual discretion. Because the survey was designed to allow people to participate anonymously, it cannot be determined if any workforce members participated in the survey.

3.5.2 Stratford community

A 'drop in' community information event was held at the Stratford Community Hall on Monday 25 March 2024 (3 hours). The session was attended by 14 community members. A summary of the most frequently raised matters is included in Table 2.

Table 2: Summary of matters most frequently raised; Stratford community

Perceived positive aspects of the Project
General support for the PHES element of the Project. Potential for job creation, but some uncertainty as to how many jobs would be local.
Perceived negative aspects of/ concerns over the Project
Impacts of the solar farm: visual impacts of solar, including visibility from The Bucketts Way, potential effects on tourist perceptions, and visibility from specific properties; general negativity about solar; scale of the solar farm and possible later expansion; potential glare effects; recycling and waste regarding solar panels. Construction noise and operational noise (PHES pumps etc.). PHES system capacity and water management; potential for overspill of upper reservoir. Engagement issues; extent and timing; concerns that the Project is not consistent with what participants had previously believed post-mining use would be.

3.5.3 Gloucester community

A 'drop in' community information event was held at the Gloucester Council Chambers on Tuesday 26 March 2024 (3 hours). According to the registration record for the session, it was attended by 12 community members. A summary of the most frequently raised matters is included in Table 3.

Table 3: Summary of matters most frequently raised; Gloucester community
Perceived positive aspects of the Project
General support for, or open-minded regarding the PHES element of the Project. Potential for job creation, but some uncertainty as to how many jobs would be local.
Perceived negative aspects of/ concerns over the Project
Impacts of the solar farm: visual impacts of solar, including visibility from The Bucketts Way, potential effects on tourist perceptions, and visibility from specific properties; general negativity about solar; scale of the solar farm and possible later expansion; potential glare effects; recycling and waste regarding solar panels. Engagement issues; extent and timing; concerns that the Project is not consistent with what participants had previously believed post-mining use would be.

3.5.4 Additional comment on community information sessions

In addition to identifying concerns that have social impact implications, participants in both sessions were interested in technical aspects of the Project. This included interest in:

- System capacity and its contribution to 'the grid'.
- The solar farm and its relationship to the PHES.
- Source water and storage capacity for the PHES system.
- The location and size of the upper reservoir and the pipeline system.
- The pumping system.
- The potential for the electricity generated to specifically service the Gloucester region.

3.5.5 Representative groups

A series of meetings with community representative groups were conducted on Wednesday 1 May and Thursday 2 May 2024. The Project is relevant to the interests of those parts of the local and regional community that these groups represent. The groups interviewed were (in order of interview):

- Gloucester Worimi First Peoples' Aboriginal Corporation (GWFPAC).
- Bucketts Way Neighbourhood Group (BWNG)[5].
- Gloucester Business Chamber (GBC).
- Advance Gloucester.
- Gloucester Environment Group (GEG).
- Gloucester Community Health Service (GCHS)/ Hunter New England Local Health District (HNELHD).

While most of these groups represent the interests of specific groups within the community, access to health services is clearly a matter of interest to all residents at some stage. Therefore, GCHS/HNELHD is presumed to represent the entire regional community in this respect.

[5] BWNG provides a range of services to the Gloucester community, including disability support, aged care services and hardship assistance. For additional information visit: https://bwng.org.au/

The approach taken to the interviews with these groups comprised two elements:

- Participants were invited to raise matters of interest to the group they represent.
- Participants were then invited to assess the matters raised using the DPHI SIAG structure for assessing the significance of impacts and the categories of impacts (SIAG Technical Supplement).

The DPHI SIAG Technical Supplement structure is summarised in Tables 4 to 6 (and reproduced in Annexure 6) and forms the basis for the perceived significance ratings. The DPHI SIAG Technical Supplement structure has been used to prioritise social impact management/mitigation. Ratings of potential residual social impacts including management/mitigation is presented in Annexure 6.

Table 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 5: Defining magnitude levels for social impacts

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% 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, for a reasonably short time, for a small number of people who are generally adaptable and not vulnerable.
Minimal	Little noticeable change experienced by people in the locality.

Table 6: 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	Medium	Medium	High	High
D	Unlikely	Low	Low	Medium	Medium	High
E	Very unlikely	Low	Low	Low	Medium	Medium

While the DPHI SIAG Technical Supplement defines likelihood and magnitude for social impacts, it does not define the 'low', 'medium', 'high' and 'very high' social impact significance ratings.

Consistent with other Yancoal risk assessments, social impacts with a significance of 'low' and 'medium' are considered tolerable.

In general, unmitigated negative social impacts with a significance of 'high' or 'very high' indicated that Project-specific social management is required to be implemented, which if successfully implemented by Yancoal, would be aimed at reducing the significance of the negative social impact to 'low' or 'moderate'.

Table 7 provides a summary of the engagements with each of these groups, the key matters they raised and their ratings of impacts in relation to those matters.

In addition to the key social impact matters raised by community representative groups identified in Table 7, it should be noted that community representative groups expressed interest in the PHES being used as an educational tourist site. The use of the PHES as an educational tourist site is not part of the Project.

Table 7: Social impact matters raised by community representative groups

	GWFPAC		
Description of impact	**Impact categories affected**	**Perceived significance rating**	**Perceived positive/negative impact**
Aboriginal cultural sites and artefacts disturbance/loss	Culture	A5	Negative
Potential psychological etc. impacts of sites being lost	Community; health and wellbeing	A3	Negative
Employment effects (long term)	Livelihoods	A1	Positive
Housing effects – construction period	Way of life; community; health and wellbeing	A4	Negative
Demand on services, particularly medical - construction period	Accessibility	A3	Negative
Increased demand for other local businesses (retail, hospitality etc.) - construction period	Accessibility; livelihoods	A3	Positive

Description of impact	BWNG Impact categories affected	Perceived significance rating	Perceived positive/negative impact
Overall Project opportunity	Various	Not rated	Positive
Construction stage employment	Way of life (B3, negative); community (A5, negative); accessibility (C3, negative); livelihoods (C3, positive)	Refer to impact categories column	
Access to health services (construction stage)	Way of life; accessibility; health and wellbeing	A4	Negative
Effects on The Bucketts Way (traffic), emergency services access etc.	Accessibility; surroundings	C3	Negative
Rental market effects – construction stage	Community; health and wellbeing	A4	Negative

Description of impact	GBC Impact categories affected	Perceived significance rating	Perceived positive/negative impact
Visual impacts of solar farm	Surroundings	A4	Negative
Potential for visual impacts to negatively affect the perception of Gloucester as the gateway to the World Heritage Area	Surroundings	D1	Negative
Construction temporary workforce accommodation/ renting	Way of life (A4, positive); community (A5, positive/ negative); accessibility (A5, negative); health and wellbeing (A5, negative); livelihoods (A4, positive).	Refer to impact categories column	
Demand on medical services and hospital	Accessibility	C5	Negative
Solar farm maintenance – water required to keep panels clean for optimal performance	Surroundings	Not rated	Negative
Does the community want the Project? (Community input/'ownership').	Decision-making systems	A5	Neutral

Description of impact	Advance Gloucester Impact categories affected	Perceived significance rating	Perceived positive/negative impact
Solar farm element of the Project	Community (B5, positive and negative aspects); surroundings (A3/A4, negative)	Refer to impact categories column	
PHES element of the Project	Various	Not rated	Positive
Construction stage employment	Community (A2/A3, positive and negative aspects); accessibility (A2/A3, positive and negative aspects)	Refer to impact categories column	
Alternative agricultural land use	Surroundings	A5	Negative
Local employment	Community; livelihoods	A1/A2	Positive
Road use - The Bucketts Way	Accessibility	C3	Neutral
Cumulative psychological impact on the community of various projects	Health and wellbeing	Not rated	Negative
Water consumption – solar panel cleaning/maintenance	Surroundings	Not rated	Negative

Description of impact	GEG Impact categories affected	Perceived significance rating	Perceived positive/negative impact
Preservation of Koala as 'umbrella species; avoidance of habitat fragmentation; effects on ecosystem services; mental health impacts due to impacts on biodiversity	Culture (B3, negative); health and wellbeing (A4/B3, negative)[6]; surroundings (A4, negative)	Refer to impact categories column	
Construction stage workforce	Way of life (A4, positive and negative aspects); accessibility (unrated, negative)	Refer to impact categories column	
Effects on The Bucketts Way (construction stage)	Accessibility	B3	Negative
Yancoal/SPCL should maintain communication with the community in relation to the Project, including Registered Aboriginal Parties	Culture	B4/A5	Positive
Noise	Health and wellbeing	'A' likelihood, magnitude not rated	Negative
Solar farm	Surroundings	A2	Negative

[6] Multiple ratings are reported for impacts which individual GEG members rated the specific impact differently.

Description of impact	GCHS/HNELHD Impact categories affected	Perceived significance rating	Perceived positive/negative impact
Construction stage workforce	Community	A3	Positive
Operations stage workforce	Community; livelihoods	D1	Positive
Potential impacts of accidents on GCHS/HNELHD	Accessibility	A3	Negative
Demand for general and emergency services	Accessibility; health and wellbeing	B3	Negative
Public transport	Accessibility	B2	Negative
Transport impacts overall	Accessibility; construction stage (A3, negative); accessibility, operations stage (D1, negative).	Refer to impact categories column	
Need to communicate with/ inform community	Decision-making systems	C3	Positive

3.5.6 Institutional stakeholders

Engagement with institutional stakeholders for which the Project was assessed as being of interest was conducted as follows:

- MidCoast Council (MCC) Catchment Officer (8/9 May 2024).
- Business Hunter Chief Executive Officer (CEO) (9 May 2024).
- MCC Manager Economic and Destination Development (MEDD) (14 May 2024).

3.5.6.1 MCC Catchment Officer

An approach was made to MCC's Catchment Officer to provide comment on the Project. Initial contact, involving an outline of the Project, was followed up with the provision of information regarding the Project.

3.5.6.2 Business Hunter CEO

The Business Hunter CEO had received a Project briefing from Yancoal management. The interview relating to information for the SIA was conducted by phone. Given Business Hunter's focus on economic development, the interview covered a range of potential socioeconomic implications of the Project. In summary, the key points were:

- Potential effects on businesses in the area:
  - Decommissioning and rehabilitation stages may create local business, but is likely to be different from mining requirements, so there may be impacts anyway.
  - Possible that some businesses would be adaptable to decommissioning and rehabilitation, PHES construction and operational tasks (maintenance etc.)
  - Volume of work would be lower than for the SMC and DCM (noting that Business Hunter was advised that scale down was in progress).
  - Eventual substantial reduction in work would probably involve larger scale job losses and potentially business closures.
- Social/economic impacts of employment likely to be dictated by the locational source of the workforce. Construction stage likely drive-in drive-out (DIDO) may reduce positive economic effects on businesses, but would still be beneficial effects from DIDO workforce and from those who move to town for the period.
- The local pool of appropriately skilled workers would also be a factor, noting that retraining and reskilling based on current knowledge and skills may be moderating factors.
- Managing the construction workforce (accommodation in particular) is a challenge. Most locations have housing supply constraints. Not feasible to build stock that then becomes excess once the construction period is over.
- Getting sufficient trades to build stock is an underlying issue anyway. Some of these may also be drawn away by other opportunities (including infrastructure construction).

3.5.6.3 MCC Manager Economic and Destination Development

A virtual meeting with the MCC MEDD was held on 14 May 2024. MCC MEDD's comments are as follows:

It is understood that there is a transition towards the closure of multiple coal mines across Australia, with a focus on new ways of energy generation in the way of renewables.

Recommended focus areas to benefit MidCoast

The areas in which the local community would benefit most from would fall under skills development and attraction and investment attraction. *The desired outcome would be to sustain some level of economic impact (employment and local expenditure) within the townships of Gloucester and Stroud (keeping in mind the considerable decreases in employment numbers and on-going maintenance and operations requirements).*

- Use local supply chain for the construction, operations and maintenance of the project, where appropriate. Where Gloucester may not have the required supply chain, investigation into other industrial precincts across the region should be undertaken. Council can assist in identifying relevant businesses.
- Attraction of supply chain to support the on-going operations and maintenance of the project. This would ideally include upgrades in the infrastructure at the industrial precinct in Gloucester such as drainage and telecommunications.
- Consideration into accommodation (housing) requirements will be needed, specifically for the construction phase of the SREH. There is a current shortage of housing across the MidCoast.
- New and retained jobs to be broken down into high / low skilled workers, across both construction and operational phases.
    - The region needs to ensure we are creating and maximising opportunities for jobs that are highly-skilled, equating to higher paid jobs.
    - Whilst there has been benefit to the local community in terms of supporting industries, there is limited information on the kinds of services and skills that would be in demand for the different phases of the closure of the current site, to the construction and operations of the renewables site.
    - Identification of specialised skill requirements for the type of specialised infrastructure require for the SREH.

General overview / comments

- 350 jobs over the construction period, however only 10FTE operationally.
    - What are the value of the jobs? Skill level?
    - 90% reduction in jobs (and wages), which is a significant impact to the local community in terms of economic benefit.
- $16 million in wages and salary (avg $155,000pp), to approx. $1.5 million in wages and salary, based on 10 employees (this is the best-case scenario)
- A gradual decline in overall economic impact in the sector locally over the last few years, which is expected in these resource industries.

- Work with local education groups (e.g. Taree Universities Campus, TAFE) to identify skills needs / skills matching capabilities.
- Mining accounts for almost 6% of the regions (SA2 level) employment, and 30% (SA2 level) of the regional value-add, which *will substantially reduce in the next few years*.
- Investigate opportunities to co-design a renewable energy technology hub in the region, research and development facility, water lab, or other remote technologies testing facility. (which can be utilised at other mine sites and future rehabilitation sites).

MCC MEDD's views include a number of potential initiatives that Yancoal may consider as means for increasing local and regional benefits.

3.5.6.4 MCC Gloucester Visitor Information Centre (GVIC)

An interview with the Gloucester Visitor Information Centre (GVIC) Destination Experience Officer (DEO) was conducted on 16 May 2024. Summary points are as follows:

- The DEO reported having heard little discussion, and no negative feedback about the Project around Gloucester.
- The DEO did not have any personal concerns with the solar farm element of the Project.
- There is a current shortage of short term accommodation in Gloucester and surrounds. Motels usually retain only a small number of standby rooms for tourists, the rest are occupied by contract workers coming into the area.
- The DEO previously worked in hospitality when there were large numbers of non-resident workers in the region for SCPL, Duralie Coal Pty Ltd (DCPL) and other projects. DEO's experience was that visiting workers are generally not disruptive to the town's way of life.
- The DEO noted the positive income effects for businesses such as accommodation of a temporary workforce.

3.5.6.4.1 Comment on GVIC engagement

The observation that there are already short term accommodation constraints relating to contract workers coming into the area provides insight into the challenges that a large temporary workforce would produce. This is consistent with other stakeholder comments on this issue.

3.5.6.5 NSW Police Force – Gloucester Police Station

Yancoal Project personnel initiated contact with Gloucester Police Station for comment on the Project. It was anticipated that Police may have a view on two matters in particular. These were the potential for impacts of the temporary construction workforce, and potential additional traffic movements on The Bucketts Way, noting that this would also be most relevant during the construction stage. At the time of completion of the SIA for lodgement, no formal response had been received from NSW Police.

3.5.6.6 NSW Ambulance Service

An email enquiry on potential Project impacts was forwarded to NSW Ambulance Service Hunter Sector Office on 17 May 2024. The main focus of this enquiry was the construction stage workforce and its potential effects on service demand. At the time of completion of the SIA for lodgement, no formal response had been received from NSW Ambulance.

3.5.7 SEARs requirements

The SEARs for the Project stipulated assessment of potential impacts on 'users of nearby National Parks and Reserves (including The Glen Nature Reserve), Conservation Areas'. Relevant engagement is reported in the following sections.

3.5.7.1 NPWS engagement

The Glen Nature Reserve is administered by the NSW National Parks and Wildlife Service (NPWS). An image showing the relative location of the Project and The Glen Nature Reserve is included in Annexure 11. A meeting was conducted on 16 May 2024 with the NPWS Gloucester Area Manager and a NPWS Ranger. Matters raised by NPWS are as follows:

- There is presence of Craven Grey Box in Yates's Trail area near to the Project site. The species is classified as an Asset of Intergenerational Significance (AIS).
- Not insignificant visitation, perhaps 20,000 visits per year, bushwalking, bird watching, mountain bike riding.
- Reserve has potential for conversion to a National Park in future.
    - Good proximity to town.
    - Topography OK.
    - Area has conservation and heritage value.
- NPWS personnel don't have much interaction with users.
- Tourism is significant in the region. Tourism Research Australia (TRA) data around 10 years estimated tourism value in Gloucester as $50m p.a.
- May be potential for interpretive tourism use of the SREH, (schools etc.).
- Generally, Reserve and visitors are unlikely to be affected. Access from Glen Rd through to Waukivory Rd, not near to site.

Specific potential project impacts identified were:

- Risk of flooding/overspill from upper reservoir.
- Conservation plan for offset areas.
- Potential impacts on groundwater re faults and aquifers in the area (re tunnel lining integrity).
- Fire management issues - use of water from existing dam re firebombing. Potential radio interference from solar farm? (bushfire air operations); possible glint/glare effects on firefighting aircraft.

3.5.7.2 AWC engagement

In addition to 'National Parks and Reserves', the SEARs for the Project require assessment of impacts on users of nearby Conservation Areas. The Australian Wildlife Conservancy (AWC) has stewardship of the Waulinbakh Wildlife Sanctuary in the Karuah River Valley. The sanctuary is in the vicinity of the DCM. The Project was discussed with AWC's Regional Operations Manager. This discussion took place by telephone on 15 May 2024. Given the distance between the Project and the sanctuary, AWC did not wish to provide comment on the Project at this stage.

3.5.8 Additional stakeholder engagement in relation to housing and accommodation

A meeting with the Managing Director (MD) of Hannaford Stock and Land Australia (Hannaford's) was held on 16 May 2024. Hannaford's provides property management services to Yancoal/SCPL/DCPL for its property holdings in the Gloucester region. The main purpose of this discussion was to provide additional understanding of the likely impacts of the construction stage workforce on housing and temporary accommodation in the area.

The MD's view is that Gloucester does not have capacity to house a temporary workforce of up to 350. Based on full use of temporary accommodation (hotel/motel, Air BnB etc.) between Gloucester and Stroud, there may be capacity for 200 people. This would create economic benefit for accommodation and hospitality providers and other relevant businesses in Gloucester. Any worker households choosing to settle in the area as a result of the Project would be a longer term positive in terms of economic contribution.

The MD also provided comment on other aspects of the Project. These are summarised as:

- MD is a supporter of mining in the region.
- The PHES element of the Project and use of water on the site are both positive aspects of the Project.
- The MD had a strongly negative view on the solar farm element, describing it as an 'eyesore'. Relocation to less visible parts of the SMC holding, or vegetation screening were stated as possible mitigation.
- Other potential uses of the land were also identified, including agricultural use, using the dam as a lake for recreational use, and various configurations of subdivision of the site (e.g. rural-residential land parcels).

3.5.8.1.1 Comment on engagement with Hannaford's

The MD's provision of a quantitative indication on temporary workforce accommodation capacity may provide some guidance on the approach to this aspect of the Project. This is particularly the case in the context that this is a generalised stakeholder concern. Section 8.4.2 discusses temporary workforce accommodation in detail. Given the assessment of accommodation for perhaps 200 people, this may indicate that the active roster for a DIDO workforce may be able to be accommodated on rotation.

The MD's views on the Project are generally consistent with those of other stakeholders. In summary, these are general support for the PHES component of the Project, but dissatisfaction with the solar farm component of the Project.

3.5.9 Additional direct engagement undertaken by Yancoal

Yancoal has also directly engaged with a number of the individual and organisational stakeholders that have been involved with the engagement program discussed in the preceding sections. Generally, the main issues reported in the engagement log are consistent with those identified. In a number of instances, this is a function of individuals and groups participating in several different forms of engagement.

Generally, the most contentious matter is that of the solar farm. Visual impacts and related effects (e.g. property value impacts for nearby stakeholders) were identified as negative impacts. There was broad support for renewable energy development, and specifically PHES. These matters raised through this additional communication channel are addressed in Section 7 as parts of the assessments for each of these impacts.

3.6 Report on community survey

3.6.1 Method and logistics

A Project-specific survey instrument was developed and refined for online participation through the *Survey Monkey* feedback platform. Access to the survey was made publicly available on 13 March 2024 and remained accessible online until 27 April 2024 (i.e. approximately six weeks). Notification to specific groups and the community is detailed in the following subsections.

3.6.2 Responses and sample characteristics

38 responses were received in total during the period in which the survey was publicly accessible. A copy of the online survey instrument and a full quantitative and qualitative report generated by the Survey Monkey platform is included in Annexures 9 and 10 of this SIA, respectively.

- 94.7 percent (%) or respondents lived in Gloucester and its surrounds.
- 52.6% of respondents were long term residents, having lived in Gloucester for 20 or more years. ABS 2021 Census *Place of usual residence 5 years ago* data can be interpreted as being relatively consistent with this outcome. 57% of people were at the same address as five years ago within the Statistical Area Level 2 (SA2) and 69% in total lived in the SA2 five years ago.
- The sample was skewed towards older residents. 75.6% of respondents were aged 45 to 74 years; 91.8% were aged 45 years and over. This is also the largest age group for the SA2 population as a whole (62.4%).
- Consistent with the older age profile of the sample, 33.3% of the respondents were retired and 51.4% lived in two person households. ABS data for the SA2 population record that both partners were not working in 35.8% of couple families and 55.5% of families were 'couple without children' families.

Although there are some differences among the sample and the general SA2 population, it is reasonable to interpret the sample as reflective of the local demographic structure to some extent.

3.6.3 Key Project-related survey findings

Table 8 provides a summary of the key findings from the survey.

Table 8: Key findings, community survey

Description	Results
Q6: Overall effect of the Project for the area	• 47.4% of the sample were either positive or very positive about the Project. • 7.9% were neutral. • 23.7% were negative. • 21.0% were unsure.
Q4: Positives about the Project for the area[7]	• Reuse of mine sites. • Positive for the local economy. • Jobs. • Direct benefit for some local businesses. • It would keep some people in town. • Positive for the environment. • Investment in projects in the region by Yancoal. • Increase in tourism.
Q5: Negatives about the Project for the area	• Risk to native fauna; loss of agricultural land; detracts from rural amenity/landscape. • Visual effects; Clearing of native vegetation. • Construction traffic. • Effects of non-resident construction workforce. • Safety aspects.
Q1: Support for renewable energy development in the Gloucester Valley	• Support, 55.3%. • Do not support, 23.7%. • Neutral, 7.9%. • Unsure, 13.1%.
Q2: Most valued aspects of the area[8]	• Environment and surroundings, 73.6%. • Agriculture/farming, 18.4%. • Community/people, 15.8%. • Lifestyle/way of life, 13.2% • Employment opportunities, 10.5%.

[7] In order of frequency, most responses to least responses. 'Other' category not reported for positive and negative impacts.

[8] This reports on an open ended question. Respondents could identify as many features as they wished, therefore % totals in the table are not additive. This also applies to the following question.

Description	Results
Q3: Most valued aspects of the community	• Country town atmosphere and positive community effects, 100%. • Community spirit, cohesion and mutual support, 61.8%. • Friendliness, 17.6%. • Safety, 11.8%.
Q7: Effects of Project on respondent	• Positive or some positive effects, 37.8%. • Negatively, 32.4%. • Negatively (visual impacts), 24.3%. • Not at all/little etc., 27.0%. • Not at all/little with qualification[9], 18.9%.

3.7 Additional community information and engagement collateral

3.7.1 Regular newsletters/ factsheets

Yancoal has commenced regular publication of community newsletters, to provide information in relation to closure and post-closure activity on the SMC and DCM, and on the Project. The extent of distribution of the newsletters should be regularly monitored in the context of the extent of community engagement and interest in each of the projects, to maximise coverage.

3.7.2 Electronic engagement collateral

The newsletters/factsheets include website details for both the SMC and DCM[10]. Project information will be progressively published on the sites. Project-specific information will principally be posted on the SREH website[11]. At the time of preparation of this SIA, the SREH website currently provides public access to the Scoping Report for the Project. The Scoping Report provides a detailed Project description. In addition, an email address for receipt of Project-specific feedback is also published in the newsletters/factsheets. A summary of email comment received regarding the Project is presented in Section 3.6.3.

3.7.3 SREH direct email correspondence

At the time of submitting this SIA, five (5) emails had been received by the Project email address[12]. The substantive matters raised in the emails that have bearing on the social impacts of the Project are consistent with those raised through the other elements of the engagement program. In summary, the main matters raised were:

- Visual impacts, principally relating to the solar farm, and to a lesser extent the upper reservoir. Other visual impacts include solar panel glare, clearing of vegetation and light from infrastructure on the site.

[9] These included responses such as 'It won't [affect me] personally, but happy to see this go ahead!'; 'I don't think it will. Visually only impact will be negative when driving past'.
[10] www.stratfordcoal.com.au ; www.duraliecoal.com.au .
[11] https://www.stratfordcoal.com.au/page/SREH/
[12] SREH.feedback@yancoal.com.au

- Stakeholder perceptions that the Project is not consistent with their understandings of previous proposed use and Yancoal's intention with respect to operating the site (i.e. directly or operation by another party).
- Employment impacts.
- Support for the development as positive for the region and potentially contributing to capacity building. This entails that the development firstly is acceptable to the community.
- Suggestions for alternative land uses.

Issues with engagement processes were also raised. These relate to communications with SCPL generally, and more specifically in relation to the Project. It is noted that these issues have bearing on some of the matters identified in other engagement elements, particularly in respect of expectations about PMLU.

Yancoal has also progressively provided briefings to key statutory stakeholders. These include the various government departments having oversight of specific aspects of the Project, and various relevant functions within MCC via senior management and elected representatives.

3.8 Summary of community issues

The main issues identified by the various parties with whom engagement was undertaken is summarily addressed in Table 9. Some of the key implications for addressing potential impacts are also outlined. The detailed assessment of potential impacts and their sources are included in Section 6.

Table 9: Summary of perceived positive and negative impacts

Perceived positive aspects of the Project
• Support for renewable energy projects in the Gloucester Valley. • Construction stage workforce (demand increase in trade for local businesses and service providers). • Operations stage workforce (permanent economic and social activity and periodic additional economic activity). • Positive economic impacts of Yancoal's investment in the region. • Yancoal/SPCL should maintain communication with the community in relation to the Project. • Beneficial reuse of the SMC site. • Contribution to NSW/NEM supply and system stability. • Contribution to meeting NSW Government emissions reduction targets. • Reduction in energy costs across NSW/NEM. • Construction stage workforce (regular high occupancy levels and income for accommodation providers). • Construction stage workforce demographic effects (few negative impacts for previous projects). • Engagement with GWFPAC, RAPs etc. to identify and preserve cultural heritage items. • Solar farm land use will create broad distribution of benefit rather than benefit accruing to one land occupant. • Recycling and beneficial reuse of solar farm waste (e.g., PV panel materials/componentry refuse).
Perceived negative aspects of/ concerns over the Project
• Construction stage workforce (increased demand for and pressure on housing). • Concerns with engagement process. • Construction stage workforce increase in demand for services (e.g., medical) may impact community access. • Construction stage workforce (increased pressure on accommodation detracting from tourist activity). • Construction stage workforce (temporary change in demographic structure of the population). • Solar farm (visual impacts). • Solar farm (maintenance water usage, site management (weeds etc.) and lack of agri-solar use). • Management of waste from the solar farm. • Concerns for impacts on biodiversity (particularly construction of the upper reservoir and subsequent inundation). • Concern for impacts on Aboriginal cultural heritage and related community impacts. • Concern for potential overspill of upper reservoir/flooding. • Construction stage traffic (The Bucketts Way). • Solar farm (exclusion of alternative land uses, particularly agricultural use).

3.8.1 Frequently identified positive issues

The various elements in the engagement program indicate that there is a level of community support for the Project. There is support for the development of renewables capability in the Gloucester region. This entails other positive aspects, such as employment and some level of opportunity for commercial engagement with local and regional businesses.

There is also a recognition that the closure of the SMC and DCM will negatively affect the local economy. Alternative, productive use of land associated with the SMC as proposed with the Project is seen to counterbalance this impact to some extent.

3.8.2 Frequently identified negative issues and community concerns

Based on engagement outcomes, the most contentious element of the Project is the proposed solar farm supporting the PHES. The issue of greatest concern regarding the solar array is its visual impacts, to which there are several aspects of impact (e.g. local visual amenity and potential perceptions of visitors to the area). However, other impacts such as disposal of panels at the end of their economic life, or if damaged, were also raised.

Community groups also identified potential challenges with the temporary influx of the large construction workforce during that stage of the Project. Of particular concern was the potential impact that this may have on the local housing market. The potential for competition with tourists for visitor accommodation was also a concern. On the other hand, it was also recognised that there would be likely to be positive impacts for businesses in the region and that some local workers may benefit from employment on the Project.

There are a number of other issues that were raised by specific interest groups, such as those relating to potential environmental and biodiversity effects with regard to construction of the upper reservoir.

3.8.3 Implications for assessment of social impacts

There is evidence that parts of the community understand that there is some level of distributive disjuncture relating to the Project, to the extent that the purposive benefit of the Project (contribution of electricity into the National Electricity Market [NEM]) would be broadly distributed across the NEM. Conversely, potential negative impacts such as those relating to development on the SMC site are more localised. This is interpreted as one of the bases for the reservations about the Project that were expressed by some stakeholders and stakeholder groups.

The main implication, however, is that overall, the engagement results indicate that there is reasonably broad support for the Project. This is best exemplified by the overall positive view expressed by key service providers, such as the hospital, whose resources may be most called upon, particularly during Project construction. If the main matters of concern can be satisfactorily addressed through AMM measures, there is some prospect that the Project would be acceptable to the local community generally.

3.9 Responses to community engagement

The engagement process with the community and other stakeholders contributed to several responses being factored into Project planning. These included:

- The removal of the section of the solar farm on the western side of The Bucketts Way when compared to the Scoping Report.
- The removal of one section of the solar farm that was near to The Bucketts Way (on the eastern side) and may have been particularly visible. Vegetative screening is now proposed in this area of the solar farm originally proposed adjacent to The Bucketts Way (on the eastern side), to further mitigate visual impact.
- Proposed development of a Construction Workforce Accommodation Strategy (CWAS) to manage effects during this stage of the Project.
- Development of plans for providing information on the Project to the community on a continuing basis.

3.10 Renewable energy and the perceptions of the general population

3.10.1 CSIRO Understanding Australian attitudes toward the renewable energy transition[13]

As Australia's national science agency, the Commonwealth Scientific and Industrial Research Organisation (CSIRO) states that it has 'conducted the most comprehensive and representative survey of Australian attitudes to the renewable energy transition and different types of renewable energy infrastructure' (CSIRO, 2024). The survey report was released in April 2024.

On this basis, CSIRO's findings are relied on to provide a summary of the general population's view on the renewable energy transition. As is identified in Section 5, the social baseline and social locality for a project of this scale and strategic importance (Section 4) takes into account the implications for the general population as Project stakeholders.

In general terms, CSIRO reported that '*Many Australians also support collective action to address the negative impacts of climate change. A majority of Australians expressed agreement, or strong agreement, with the idea that collective action can effectively mitigate the adverse impacts of climate change*', and that there is 'a prevailing sentiment among the majority in favour of proactive measures and support for *a collective response to mitigating climate change in Australia*' (Poruschi et al, CSIRO Part 1, 2024:42).

Relevant findings in relation to the Project are:

- Within the top three priorities nominated by participants for the energy transition were:
  - More affordable energy for everyone (82% of the responses).
  - Increasing energy self-reliance (71%).
  - Reducing carbon emissions (56%).
  - Minimising power outages (52%).

[13] Poruschi et al; McCrea et al. CSIRO April 2024: https://www.csiro.au/en/research/environmental-impacts/decarbonisation/energy-transition

- More than 80% of Australians would, at least, tolerate living within 10 km of renewable energy infrastructure.
- Comparing various types of renewables infrastructure[14], living near solar farms had the highest level of acceptance (12% would 'reject it', 18% would 'tolerate it', 37% would be 'OK with it', 20% would 'approve of it' and 12% would 'embrace it'.
- Among respondents:
  - Living 'out of town (e.g. living on a rural property)', the overall attitude to living near renewables infrastructure (not specifically a solar farm) was reported as 'reject it' (33%), 'tolerate it' (23%), 'OK with it (25%), 'approve of it (10%) and 'embrace it' (9%).
  - Living in 'a town', the overall attitude to living near renewables infrastructure was reported as 'reject it' (18%), 'tolerate it' (20%), 'OK with it (36%), 'approve of it (19%) and 'embrace it (7%).
- Attitudes to solar farms were less favourable in 2023 compared to 2020. The percentage of people rejecting the idea of living near a solar farm had increased from 5% in 2020 to 12% in 2023 and the percentage of people who would be 'OK with it' declined from 47% to 37%.

3.10.2 Comments in relation to the Project

In interpreting the potential implications of the CSIRO research for the Project, some limitations are acknowledged. Principally, the structure of the CSIRO survey was evidently different to the engagement methods and survey structures used during the program of engagement activities, so results may not be entirely comparable with the Project outcomes.

The CSIRO research also focuses on the more commonly recognised forms of renewables infrastructure (solar and wind). It does not address other energy technologies, such as PHES projects, in detail[15]. It should also be recognised that the locations of CSIRO survey participants, while broadly comparable (i.e. participants living in a town or out of town), the specific characteristics of the area in which participants live may differ substantially from those of Gloucester and its surrounds. The CSIRO research is also based on the hypothetical location of renewables infrastructure in people's areas, whereas the community in the Gloucester district is contemplating an actual project. This should be acknowledged as a potential source of different community views on similar renewables infrastructure projects.

The decrease in favourable attitudes to living near a solar farm among the CSIRO's general population sample can be interpreted as being consistent with the Project survey output. Project survey respondents identified the local/regional surroundings as a valued aspect of the area. This may also provide some insight into this lower level of acceptance within the general population.

[14] Solar farms, onshore windfarms, offshore windfarms, transmission lines.
[15] Question 39 of the survey asked, 'How knowledgeable are you about the following energy technologies?'. 'Pumped hydro' was one response option, scoring 2.1 on a Likert-scaled response structure, where '1 = Little or no knowledge and 5 = Extensive knowledge'.

There is also some convergence between matters of interest to the local community and the general population. Table 10 is based on Figures 26 and 29 from the CSIRO report (Part 2) and shows specific perceived impacts and benefits identified in the report. Corresponding impacts and benefits identified in the Project engagement are also shown. The table demonstrates the similarities and some differences between the local community and general population[16]. Overall, the information indicates that the range of positive and negative effects can be considered as broadly comparable between the Project and CSIRO samples.

[16] Some impacts and/or benefits from the CSIRO report specifically related to offshore windfarms. These have been excluded from the table. Responses noted for the SREH engagement are not identically stated to those from the CSIRO report, but are directly comparable.

Table 10: Comparison of CSIRO and Project matters of interest

Perceived Local and wider benefits – CSIRO report	***Identified for SREH***
Local benefits	
Local employment	Yes
Opportunities for young people (e.g. under 25 years) to stay in the region	Yes
Corporate support for local community activities	
Additional local community services, facilities and infrastructure	
Overall this development would bring significant benefits to the local community	Yes
Creating shared value with property improvements for impacted landowners	
Cheaper electricity for local industries	Yes
Cheaper electricity for local residents	Yes
Wider benefits	
Increasing energy supply in your state/territory	Yes
Improving energy capacity and reliability in the wider region	Yes
Boosting the wider state/territory economy	
Making the wider region more attractive to new business and industry	
Overall this development would contribute to benefits beyond your community	Yes
Helping to reduce energy prices in your state/territory	Yes
Possible impacts living near renewable energy infrastructure – CSIRO report	***Identified for SREH***
Changes to the local natural environment	Yes
Waste created when are decommissioned or reach their end of life	Yes
The health and wellbeing of nearby residents	Yes
Devaluing nearby properties	Yes
Overall concern about potential negative impacts	Yes
Less land available for farming and other land uses	Yes
Reducing the visual attractiveness of the local landscape	Yes
Increased traffic on roads during construction	Yes
Community division over the development	No
Dust and noise pollution during construction	Yes
Fire risks with additional transmission line developments	No
Disruption of cultural connections for First Nations peoples	Yes
Changes to local weather patterns around the development	No

4 Strategic context

4.1 National and State Greenhouse Gas Emission Reduction Targets:

4.1.1 Paris Agreement and Climate Change Act 2022:

- The *Paris Agreement* is an international treaty on climate change. It was adopted by 196 Parties at the United Nations Climate Change Conference (COP21) in Paris, France, on 12 December 2015. It entered into force on 4 November 2016 (United Nations Framework Convention on Climate Change [UNFCCC], 2024).
- Australia is a signatory to the *Paris Agreement* and has adopted a Nationally Determined Contribution (NDC) of a 43 percent (%) reduction in greenhouse gas emissions below 2005 levels by 2030 (Commonwealth of Australia, 2022).
- The Commonwealth *Climate Change Act 2022* legislates Australia's emission reduction targets under the *Paris Agreement*, and net zero by 2050.

4.1.2 NSW Policy Framework:

- The NSW Government has endorsed Australia's commitments to the *Paris Agreement* and states it will take actions consistent with the level of effort required to achieve them (Office of Environment and Heritage [OEH], 2016).
- The *NSW Climate Change Policy Framework* (OEH, 2016) outlines a long term objective of achieving net zero emissions by 2050. The NSW Government has introduced a suite of policies and legislation to achieve this objective.
- The *Net Zero Plan Stage 1: 2020-2030* (Department of Planning, Industry and Environment [DPIE], 2020a) provides the framework for NSW to reach net zero emissions by 2050. The NSW *Climate Change (Net Zero Future) Act 2023* legislates actions to deliver on the net zero emissions by the 2050 target.
- The NSW Government is aligning its 2030 emissions reduction objectives to the projections reported in the *Net Zero Plan Stage 1: 2020-30 Implementation Update* (DPIE, 2021a). These objectives aim to reduce emissions by 50% below 2005 levels by 2030. In addition, the *Net Zero Plan Implementation Update 2022* (Office of Energy and Climate Change, 2022) describes the aim to reduce emissions by 70% below 2005 levels by 2035.

4.2 National and State Renewable Energy Investment Policies:

4.2.1 Australian Renewable Energy Target:

- The Australian Government's Renewable Energy Target Scheme was developed under the *Commonwealth Renewable Energy (Electricity) Act 2000* and is designed to reduce greenhouse gas emissions in the electricity sector by encouraging renewable energy generation under the Large-scale Renewable Energy Target and Small-scale Renewable Energy Scheme.
- The Large-scale Renewable Energy Target encourages investment in renewable power stations, including solar and hydro-electric, to achieve 33,000 GWh of additional renewable electricity each year until 2030.

4.2.2 NSW Electricity Infrastructure Roadmap and Electricity Infrastructure Investment Act 2020:

- The *NSW Electricity Infrastructure Roadmap* (DPIE, 2020b) and the *Electricity Infrastructure Investment Act 2020* (EII Act) outline the regulatory framework to coordinate investment in the transmission, generation, storage and firming infrastructure required to maintain reliability while decarbonising the NSW electricity grid.
- Part 3 of the EII Act defines an Energy Security Target, which aims to achieve reliable electricity supply over the medium and long term for NSW electricity consumers.
- Part 6 of the EII Act applies to LDS infrastructure for storage of electricity that "*consists of storage units with a registered capacity that can be dispatched for at least 8 hours, and is scheduled by AEMO in the central dispatch process under the National Electricity Rules*". This part sets out the NSW Government's minimum investment objectives for Long Duration Storage (LDS) for the period ending 31 December 2029, being the establishment of 12 gigawatts (GW) of additional renewable energy generation, and an additional 2 GW of LDS capacity.
- The need for the Project derives from legislation and policies targeting decarbonisation of the electricity grid and investment in replacement energy from renewable energy projects.

4.2.3 Strategic Requirement for Long Duration Storage

- Due to the scheduled closure of coal-fired power stations, and replacement with variable renewable energy (VRE) (e.g. solar and wind), the *2023 Electricity Statement of Opportunities* (Australian Energy Market Operator [AEMO], 2023a) identified reliability gaps would be expected in NSW from 2025 to 2026 and onwards.
- AEMO (2023b) highlights the need for more energy storage to prevent reliability shortages.
- LDS is able to produce energy on demand and assist with the redistribution of VRE.
- That is, during periods when the sun is shining and the wind is blowing, excess solar and wind energy can be generated and stored by LDS projects. This stored energy can then be redistributed to the grid when VRE is not sufficient to produce enough electricity, particularly during 6:00 pm to 8:00 pm and/or 6:00 am to 8:00 am when the peak electricity demand typically occurs in the grid, and solar energy is not abundant.
- The Project would be capable of producing up to 300 MW for 12 hours, which exceeds the threshold for LDS under the EII Act.
- If approved, the Project could contribute to the additional 2 GW of LDS, legislated under the EII Act to be in place prior to 2030, and could assist in addressing the anticipated electricity reliability shortages, which are projected to occur in the near future by the NSW Government and AEMO.
- Due to the scheduled closure of coal-fired power stations, LDS projects, like the Project, have been identified as being critical to complement VRE (e.g. solar and wind), and address forecast electricity reliability shortfall.

4.2.4 Strategic Requirement for Pumped Hydro Projects

- The NSW Government has identified pumped hydro as the most established form of LDS, stating (DPIE, 2021b) (emphasis added): "***Pumped hydro is recognised as the most established form of long duration storage.*** *It provides large amounts of reliable electricity on demand by storing surplus renewable energy and releasing it into the grid when demand exceeds supply.*"
- Pumped hydro plants provide several essential ancillary services to the electricity grid, which help to maintain stability, reliability, and efficiency. Some of the key ancillary services provided by pumped hydro plants are:
  - Load balancing: Pumped hydro plants can store excess electricity during periods of low demand by pumping water from a lower reservoir to an upper reservoir. During peak demand, the water is released back to the lower reservoir, generating electricity. This load balancing helps to manage fluctuations in electricity demand and supply, ensuring grid stability.
  - Frequency regulation: Pumped hydro plants can respond quickly to changes in grid frequency by adjusting their generation or pumping capacity. This rapid response helps to maintain the grid's frequency within the required range, ensuring system stability and preventing potential blackouts.
  - Voltage regulation: Pumped hydro plants can help to maintain voltage levels within the grid by adjusting their reactive power output. This voltage regulation is essential for the stable operation of transmission and distribution networks, reducing the risk of equipment damage and service interruptions.
  - Spinning reserve: Pumped hydro plants can be kept in standby mode, ready to generate electricity at short notice if there is a sudden loss of power from other sources. This spinning reserve capability contributes to the grid's resilience and reliability in case of unexpected events or generator outages.
  - Black start capability: Pumped hydro plants can often start without relying on the electricity grid, enabling them to provide critical support to restart the grid in the event of a complete system blackout.
  - Renewable energy integration: Pumped hydro plants can help to integrate intermittent renewable energy sources, such as solar and wind, by storing excess generation during periods of high renewable output and releasing it when renewable generation is low. This storage capability allows for better utilisation of renewable resources and reduces the need for fossil fuel-based backup generation.
- Pumped hydro against alternative forms of LDS:
  - Batteries can be an alternative form of LDS (DPIE, 2019), and have advantages compared to pumped hydro in that their location is more flexible.
  - Modelling presented in the AEMO *New South Wales Development Pathways Report* (AEMO, 2021) investigated feasibility of Battery Energy Storage System (BESS) technology as an alternative to pumped hydro. It found (emphasis added): "***In the modelling outcomes, pumped hydro generation was preferred over eight-hour battery storage considering the assumed levelised cost of each***

technology. *Despite having a higher outright capital cost, pumped hydro's longer technical and economic life (40 years compared to 20 years for battery storage) means pumped hydro is expected to have lower levelised cost and therefore require less additional revenue through LTES [Long-term Electricity Supply] Agreements*."

- This aligns with the findings of the *GenCost 2023-24: Consultation draft* prepared by CSIRO in collaboration with AEMO, which identifies pumped hydro as having a relatively lower capital cost on a per unit of energy (e.g. kilowatt-hour [kWh]) basis than battery storage (Graham et al., 2023).
- Pumped hydro is recognised as the most established and cost-effective technology to deliver LDS in consideration of current BESS technology limitations. PHES can generally provide larger and longer storage than a BESS.

4.2.5 Beneficial Post-mining Land Use:

- The NSW Government has outlined its intention to promote and facilitate economic development in regional NSW via alternative PMLUs in various policy documents.
- Key actions in the NSW Government's *Strategic Statement on Coal Exploration and Mining in NSW* (Department of Regional NSW [DRNSW], 2020) include:
  - facilitating the beneficial uses of coal mining land once mining has ended; and
  - supporting the diversification of coal-reliant regional economies, including developing and implementing location-specific plans to diversify the regional economies that are heavily dependent on coal mining.
- In June 2023, the NSW Government released the *Practical guide: Post-mining land use* (DRNSW, 2023), designed to "*assist and encourage mining lease holders to explore opportunities for alternative and innovate PMLUs for mine sites*". The *Practical guide: Post-mining land use* (DRNSW, 2023) identifies energy generation as a key opportunity for alternative PMLU.
- Similarly, the *Hunter Regional Plan 2041* (HRP) (Department of Planning and Environment [DPE], 2022) outlines a key planning priority in Barrington District (which is relevant to the Project location) being "*Plan for alternative land uses for former power stations and mining sites*". More specifically, the HRP (DPE, 2022). states: "*The Stratford and Duralie mines near Gloucester provide potential re-use opportunities over the 20 year period of this plan. Existing hard stand areas, vehicular access and transmission lines* ***could support renewable energy and batteries***."
- The HRP (DPE, 2022) identified the opportunity for the existing Stratford and Duralie mines to be repurposed to support the transition to renewable energy. In this regard, the development of the Project is aligned with this strategy, being able to continue attracting investment in the region after the closure of the SMC and Duralie Coal Mine.
- In general, the Project is entirely consistent with the intent of the *Strategic Statement on Coal Exploration and Mining in NSW*, *Practical guide: Post-mining land use* (DRNSW, 2023) and the HRP (DPE, 2022) in regard to the beneficial reuse of the

SMC land, and associated economic opportunities from the Project would continue to be provided to the region after the completion of mining operations.

- The Project aligns with the NSW Government intentions to facilitate beneficial use of mining land to attract investment in new industries following the completion of mining operations. If approved, the Project would be a model of beneficial PMLU.

4.3 Summary of government planning strategies

The Project may contribute to fulfilment of various relevant state and local government planning strategies. As a renewable energy project, the Project also has relevance to Australian Government strategic aims. These are discussed in the following sections.

4.4 NSW Government

The NSW Department of Climate Change, Energy, the Environment and Water (NSW DCCEEW)[17] has two published strategic documents that are particularly relevant to the SREH, the *Net Zero Plan* (NSW DCCEEW, 2024) and the *NSW Electricity Strategy* (NSW DCCEEW, 2024). Relevant content of the documents is presented in Tables 11 and 12.

4.4.1 Net Zero Plan Stage 1: 2020-2030

Table 11: Relationship of SREH to Net Zero Plan Stage 1 2020-2030

Plan ref.	Net Zero Plan element	Relevance of SREH to element
P.7	*As prices continue to fall, there will be opportunities to support economic growth, jobs, globally competitive businesses and exports. These opportunities will arise in two forms:* *First, there will be job opportunities in the deployment of these technologies. For example, **solar panels** and wind turbines are now capable of being manufactured and deployed at scale at significantly lower cost than traditional electricity generators. When combined with firming technologies, such as gas, batteries and **pumped hydro**, renewables are now the cheapest forms of new, reliable electricity generation.*	The Project includes a behind the meter solar farm to provide electricity for the pumped hydro plant. The pumped hydro plant would produce and add electricity into the 'grid'. Jobs would be created in the construction and operations stages. Although the number of long term jobs is small compared with the workforce for the previous mining use of the site, it nevertheless represents a contribution to the post-mining transition.

[17] The corresponding federal department has the same name (refer to Section 4.4).

4.4.2 NSW Electricity Strategy

Table 12: Relationship of SREH to NSW Electricity Strategy (NSWES)

Plan ref.	NSW Electricity Strategy element	Relevance of SREH to element
P.5	*Variable renewable energy needs to be complemented by firm and flexible power. Hydroelectricity meets these requirements by generating and storing electricity at scale. Pumped hydro involves pumping water into an elevated reservoir and releasing it to generate electricity. NSW has two pumped hydro projects – Shoalhaven (240 MW) and Tumut 3 (1,800 MW) - and numerous smaller, standard hydro projects.*	The Project would produce 300MW of electricity. This is larger than the Shoalhaven project as identified in the NSWES. This demonstrates that the Project would contribute to the state's power needs at scale.
P.11	*Renewables are now the most economic form of new generation, with a mix of wind and solar firmed with gas, batteries and pumped hydro expected to be the most economic form of reliable electricity.*	The Project is likely to result in favourable economic outcomes for the public in terms of pricing.
Plan ref.	**NSW Electricity Strategy element**	**Relevance of SREH to element**
P.15	*Wind and solar generation are variable in their output and need to be complemented with firm and flexible technologies, such as pumped hydro, bioenergy, concentrated solar power, demand management and gas-fired generators.*	Pumped hydro is a recognised element of firming technologies as noted in the NSWES, which has a role in the renewables energy mix as follows: '*pumped hydro and battery storage will ensure system reliability for shorter duration absences of wind and solar energy*'[18].
p.25	*Four propositions underpin the NSW Government's Electricity Strategy:* ***Principle 1: New generation, delivered by competitive markets, should reduce electricity prices and protect the environment.*** *Renewables, firmed by dispatchable technologies such as gas and storage, are the lowest cost form of new reliable electricity generation. Accordingly, a good investment environment will deliver new generation, reduce electricity prices and ensure reliability while protecting the environment.*	As above, the efficiency of renewables based generation will rely on firming elements such as the Project to ensure system integrity. As noted above, this combination of firmed renewable sources will be beneficial to the general public.

4.4.3 DPHI Hunter Regional Plan 2041

The region defined by the HRP comprises the following Local Government Areas (LGAs): Cessnock, Dungog, Lake Macquarie, Maitland, MidCoast, Muswellbrook, Newcastle, Port Stephens, Singleton and Upper Hunter LGAs. The region is shown in Figure 1.

[18] Gilmore J, Nelson T and Nolan T. *Firming technologies to reach 100% renewable energy production in Australia's National Electricity Market (NEM). Griffith University, January 2022.*

As noted in Section 4.2.5, the (HRP) directly identifies the site and its potential for renewables generation use:

'The Stratford and Duralie mines near Gloucester provide potential re-use opportunities over the 20- year period of this plan. Existing hard stand areas, vehicular access and transmission lines could support renewable energy and batteries' (HRP, p.159).

Other relevant provisions of the HRP are presented in Table 13.

Figure 1: Hunter Planning Region (DPHI)

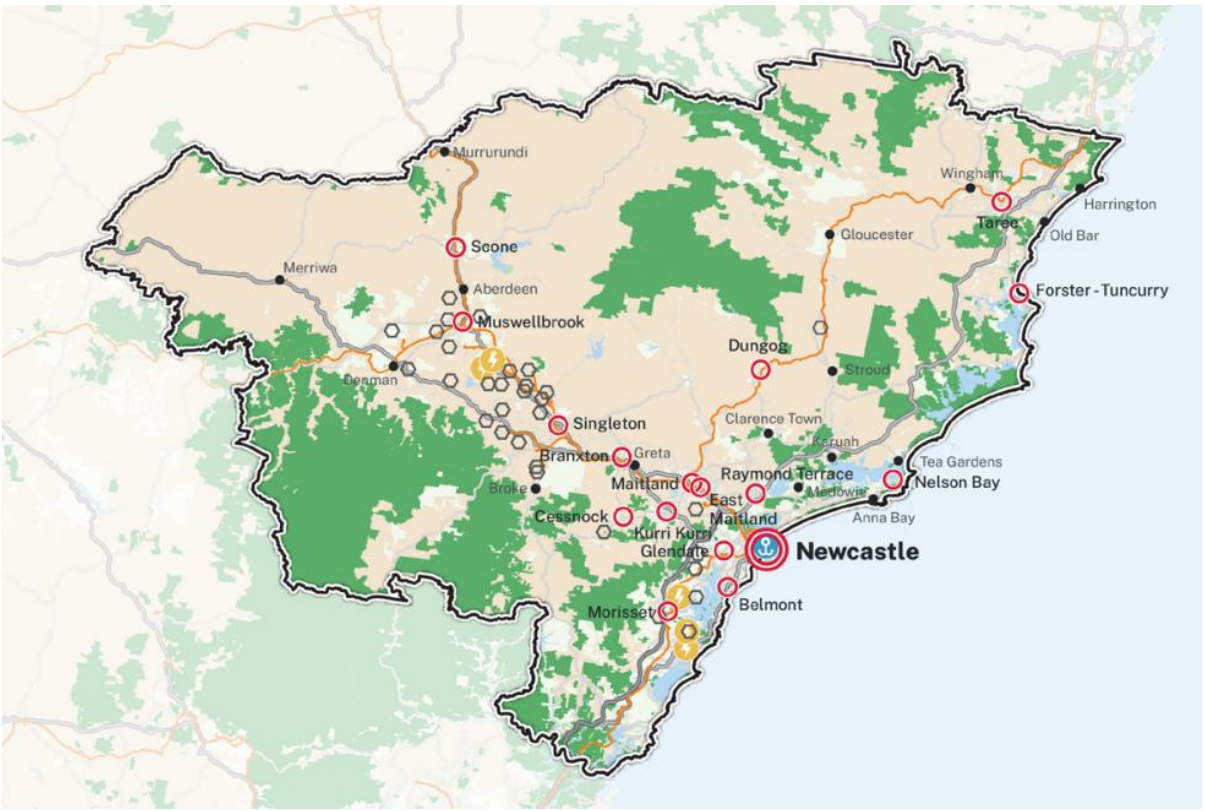


Table 13: Relationship of proposal to Hunter Regional Plan 2041

Plan ref.	*Hunter Region Plan 2041* (HRP) element	Relevance of SREH to element
P.87	*The NSW Critical Minerals and High-tech Metals Strategy acknowledges the Hunter's gold and lithium deposits could be developed, as well as the growing need for downstream processing capacity, with the majority of value-adding and job creation in the technology-intensive processing stage.* ***Former mine and power station sites could be repurposed*** *to support these activities, benefiting from strong transport links and future access to renewable energy delivered through the REZ.*	Although this provision relates to minerals and metals processing, the repurposing of land associated with the SMC for the Project is an appropriate reuse of a mine site that would deliver renewable energy into the grid.
P.120	PLANNING PRIORITY 2: ***Leverage the Upper Hunter's connection to the Six Cities and global economy****:* *Local strategic planning will review employment land capacity and take advantage of opportunities associated with former mine and power station sites. This includes opportunities to diversify industry and leverage employment opportunities arising from renewable energy investment.*	Although not at the scale of the mining use it would replace, the Project represents renewables investment that would support some permanent employment, and other periodic employment, such as that relating to regular maintenance requirements.
P.123	***Former mining regionally significant growth areas:*** *Repurpose voids where possible to support renewable energy generation or as resource that supports employment uses elsewhere on the site.*	This section of the HRP focuses on the Upper Hunter district. However, the Project is compatible with this 'place strategy outcome'.
P.127	*Plan renewable energy generation to take advantage of transmission infrastructure.*	This section of the HRP focuses on the area surrounding the decommissioned Liddell, and Bayswater, power stations. With respect to the SREH, there is an existing 132kV transmission line previously servicing the mine, that can be used to deliver electricity into the grid.
P.159	***The Stratford and Duralie mines near Gloucester provide potential re-use opportunities over the 20- year period of this plan. Existing hard stand areas, vehicular access and transmission lines could support renewable energy and batteries.***	As noted in preliminary comments.

4.4.4 Department of Regional NSW (DRNSW) – MidCoast Regional Economic Development Strategy update 2023 (REDS)

The DRNSW released a Regional Economic Development Strategy (REDS) for 38 regions covering the period 2018-2022, in conjunction with the individual regions and/or LGAs (DRNSW, 2024). The MCC REDS was updated in 2023. Relevant provisions are shown in Table 14.

Table 14: Relationship of SREH to MCC REDS

Plan ref.	MCC REDS element	Relevance of SREH to element
P.14-15	*Macroeconomic trends shaping the region's future:* ***Towards net zero*** *From an energy perspective, the MidCoast is located between the New England and the Hunter-Central Coast Renewable Energy Zones (REZs), so the region could potentially play an important role in establishing transmission corridors between REZs and energy grids within coastal markets.* ***Opportunities and risks*** *Repurposing of mining infrastructure may provide an opportunity for industrial growth in the region.*	The Project presents a relevant opportunity as stated in the REDS for mine site and infrastructure repurposing.
P.27	***Electricity, gas, water and waste services:*** *Electricity, gas, water and waste services has emerged as a key strength for the region, and significant future opportunities may exist in relation to renewable energy generation and storage.*	The Project provides a generation opportunity. Pumped hydro is a recognised element of firming or (storage) technologies.
P.27	*MidCoast has significant water resources that may support hydro based renewable energy generation and/or storage, and the potential for offshore wind development. Together, these present opportunities for the region to bolster its role in the renewable energy sector.*	The Project proposes pumped hydro generation as suggested.

4.5 MidCoast Council

4.5.1 Climate Change Strategy (CCS) Phase 1 [June 2021]

The Climate Change Strategy (CCS) was developed in collaboration with DPHI. Relevant provisions are identified in Table 15.

Table 15: Relationship of SREH to MCC CCS

Plan ref.	MCC CCS element	Relevance of SREH to element
P.49	**8.3 Grid decarbonisation** *In recent years the development of large-scale solar and wind energy generation has accelerated in NSW, and battery storage and pumped hydro are beginning to be developed alongside these intermittent generation sources.*	As noted in relation to the REDS, a pumped hydro project such as the PHES component of the Project is an appropriate firming technology to support the intermittent sources.
PP.51-53	**8.4 Buying clean energy** **8.4.1 Renewable energy power purchase agreement (PPA):** *This opportunity for MidCoast Council should be looked at in conjunction with grid decarbonisation since this will see all or most electricity sourced from renewables in any event in future.* **A renewable energy PPA:** • *is typically for a longer time period than a regular agreement,* • ***is associated with new-build solar, wind, hydro and battery projects,*** • *may be with recent or new entrants to the energy market, and* • *occurs in an uncertain policy environment for renewable energy and climate change response.*	An opportunity may exist for MCC to negotiate a PPA with Yancoal as part of the renewables generation mix.

4.6 Australian Government

4.6.1 Cth DCCEEW

The Commonwealth Department of Climate Change, Energy, the Environment and Water (Cth DCCEEW) is the lead federal agency relevant to the Project. There is a large amount of information published by Cth DCCEEW and other federal agencies. The most relevant Cth DCCEEW summary material that relates to the Project is presented in Table 16.

Table 16: Relationship of SREH to published Cth DCCEEW material

Cth DCCEEW material and source (2024)	Relevance of SREH to Cth DCCEEW material
Pumped hydro https://www.dcceew.gov.au/energy/renewable/pumped-hydro *Energy storage is an increasingly important part of our electricity system as it allows us to ensure energy is always available even when the sun and wind are not. Pumped hydro is the most common and most mature form of this energy storage.* *Dispatchable power can be added into the market to balance electricity supply and demand. Pumped hydro, including Snowy 2.0 and Battery of the Nation, can help us deliver a more reliable energy system, reducing the risk of blackouts and electricity price volatility.* *Pumped hydroelectricity schemes are a flexible way of managing our demand for electricity.*	The Project would contribute to overall system reliability as identified.

4.6.2 Australian Energy Market Operator (AEMO)

The AEMO paper *'Building power system resilience with pumped hydro energy storage'* (July 2019) mainly focuses on 'utility scale' PHES, such as Snowy 2.0. More generally however, the AEMO findings in relation to the role of PHES in future system resilience are relevant to the Project. This can be summarised in the following observation by AEMO, under the subheading '*The projected need for future storage is at a scale not seen before in the NEM':*

'AEMO forecasts the development need for utility-scale storage installations will exceed 15 gigawatts (GW) by the early 2040s, with opportunities for six-hour and 12-hour storage solutions most able to complement deeper storage solutions such as Snowy 2.0 and/or BoTN' (AEMO 2019:7)[19].

As is identified in Section 1.2.2, the SREH is a planned 12-hour/300MW system. On this basis, it is likely that the Project can form part of future planning for resilience in the broader electricity system.

[19] https://www.aemo.com.au/-/media/files/electricity/nem/planning_and_forecasting/isp/2019/isp-insights---building-power-system-resilience-with-pumped-hydro-energy-storage.pdf?la=en

4.7 Summary comments on planning context

The information presented in the preceding sections is a summary of that available substantiating the commitment to development of renewable energy technologies to manage the transition from the current more carbon intensive energy systems. It is apparent that the resilience and integrity of future systems will require firming technologies, such as PHES.

The AEMO analysis indicates that the Project is at a scale that would be beneficial to the system over the long term. Investment in renewable sources is supported at all levels of government. It is understood that the Project would be beneficial to the long term interests of the NSW and regional social locality and social baseline.

4.8 Social locality

4.8.1 DPHI definition

DPHI describes the relationship between the social locality and social baseline as:
"*The social baseline study considers social impacts in the 'social locality'. There is no prescribed meaning or fixed, predefined geographic boundary (e.g. the local suburb, or 'within 500m') to a social locality; rather, the social locality should be construed for each project, depending on its nature and its impacts. The term 'social locality' is similar to 'area of social influence' that is commonly used in SIA practice.*

Identifying the social locality begins with understanding the nature of the project, the characteristics of affected communities and how positive and negative impacts may be reasonably perceived or experienced by different people" (DPHI SIAG 2023:16).

4.8.2 Elements of the social locality

In addition to the definition (Section 4.8.1), the SIAG Technical Supplement also includes two project examples that are in part comparable to the Project, and which provide additional guidance in:

- the assessment of the social locality;
- the scoping of potential impacts and engagement; and
- the social impact prediction and assessment presented in Section 7.

The two example projects are:

- Solar farm: Large scale solar farm with battery storage, transmission infrastructure and substation, 5km from town.
- Water infrastructure: Raising of dam height.

These two examples are reproduced in Annexure 4 of this SIA for reference.

The SIAG advises that; "*Where the social locality is demographically, socially and/or culturally diverse, or where some groups may be more affected than others, disaggregate data to illustrate these differences*" (DPHI SIAG 2023:18).

There are likely to be various distributional effects of the Project. These are mainly geographically based. However, this of itself may involve diversity in effects, as noted above. As energy generation infrastructure that would deliver energy into the NEM, the Project is assessed as being a project with several elements to its social locality. In summary these populations are:

- The immediate social locality is defined as the Gloucester SA2. People in this area may directly experience impacts from the construction and operation of the Project, such as visual impacts, for example. These localised impacts would not be apparent to a substantial majority of people in other parts of the broader social locality. The SA2 may also experience more apparent positive impacts, such as local employment and business activity, based on its proximity to the site.
- The surrounding social locality is defined as the MCC LGA. People in this larger area may benefit from impacts such as employment opportunities and additional business activity. Generally however, these people may not be frequently exposed to direct, potentially negative effects.
- The Mid-North Coast Statistical Area Level 4 (SA4) was also assessed as an element of the broader social locality. The SA4 provides a broader regional context that may have particular relevance with respect to, for example, the labour market from which employees may be drawn for the project.
- NSW is assumed as the social locality at the broadest level. This is based on the electricity produced by the Project being delivered into the NEM. In practice, the NEM '*supplies 9 million customers*' (around one-third of the country's population) and services '*the six eastern and southern states and territories and delivers around 80% of all electricity consumption in Australia*'[20]. A schematic of the NEM is provided for reference in Annexure 8. As the electricity produced would be delivered into the network, it can be validly characterised as being indiscernible to the population in the diverse areas across the NEM. NSW is thus adopted as the broad social locality. NSW would benefit from the additional electricity supply, similar to other parts of the NEM. However, as the location for the plant, the NSW population is assumed as the likely beneficiary of positive construction and operations impacts, and the affected population for potential environmental or other effects. Therefore, NSW has been adopted as a proxy broad social locality for all states and territories covered by the NEM.
- The NSW population also serves as a proxy for people who may visit the area and be temporarily affected by impacts. One example of this is the SEARs requirement with respect to The Glen Nature Reserve, which may attract visitation from other areas.

As above, the dispersed distribution of the Project's output and its prospective role in addressing future demand are noted. In recognition of this, data and analyses on projected population growth are also presented for the Mid-North Coast Statistical Area Level 4 (SA4). The SA4 provides a broader regional context that may have particular relevance with respect

[20] https://www.energy.gov.au/government-priorities/energy-markets/national-electricity-market-nem

to, for example, the labour market from which employees may be drawn for the project. Diagrams of each geographic area are included in the Community Profiles annexure (Annexure 7).

4.9 Social baseline

'*The social baseline study describes the social context without the project. It documents the existing social environment, conditions and trends relevant to the impacts identified*' (DPHI SIAG 2023:21). The social baseline study has been prepared on this basis.

4.9.1 Background context of previous site use

As stated in the Project description, the Project proposes reuse of the land associated with the SMC. The previous use of the SMC is an important element of the social baseline. The SMC commenced operating in 1995. Operations are scheduled to cease mid-2024. The SMC and its sister mine, DCM (commenced operations 2003), have been significant industrial presences in the Gloucester region during their operations. The mines have been relatively large employers in the context of the relatively small total and working populations of the region. The mines also traded with various businesses in Gloucester and its surrounds, thus supporting the local economy and further employment.

4.9.2 SMC decommissioning and rehabilitation stages

As previously noted (Section 1.2.1.) mining is due to finish at SMC in mid-2024. At this stage, the SMC will transition into the mine's post-mining decommissioning and rehabilitation program. Consequently, this stage would constitute the baseline operational situation on land associated with the SMC when the Project commences.

Decommissioning and rehabilitation is forecast to take four to five years to completion and may therefore be concurrent with development and commissioning of the Project, dependent on the duration of approval and Project preparatory activity. The aims of the decommissioning and rehabilitation program are for the site to be made 'long term safe and stable'. These aims are consistent with the outcomes stipulated in the SMC Development Consent (SSD-4966) and the Rehabilitation Management Plan and Biodiversity Management Plan developed to achieve those outcomes.

Specific aspects of the Project baseline situation with respect to SMC activity are summarised by SCPL as:

- Employment levels: Initially, a consistent employee level is expected to continue from the active mining phase through the decommissioning and rehabilitation period, however this will inevitably decline.
- Local commercial interactions: Initially, interaction with local business is expected to be consistent through the rehabilitation phase. Business done with local suppliers, labour hire and possibly other local businesses are expected to continue with minor fluctuations., however this will inevitably decline.
- Operational impacts of decommissioning and rehabilitation activity: Dust, noise and lighting impacts are expected to remain minimal, which is consistent with current impacts. There is no planned increase in the onsite plant and equipment fleet. As a result, noise impacts are expected to be minimal, however minor change to the locations of work may cause variation into perceived community impact. Dust will be managed in the same way that it is currently managed, therefore changes in dust impacts are not anticipated. Lighting impacts will be improved with the removal of

the coal handling and processing plant light source. However, with the changes in operation and rehabilitation being relatively on the surface rather than in the active mine voids, SCPL will increase diligence on lighting plant and machine light impacts.

4.9.3 Community demographic profile

As is provided for in the SIAG, the community profile data and information are annexed to this SIA (Annexure 7). Social baseline observations based on the data are presented in the following sections. Additional information and data are provided where these serve to supplement observations on baseline characteristics.

4.9.3.1 Observations on personal and population characteristics

Personal and population characteristics include information on age and gender distributions, cultural, linguistic and religious diversity, and marital status.

Observations:

- The SA2 population represents approximately 11% of the total MCC LGA population. The population is small in the regional context (Taree-Wingham and Forster-Tuncurry are the two largest population centres, accounting for a combined 48.8% of the MCC LGA population).
- The local and regional populations are substantially older than the broader population of NSW, as summarised by median ages, which are 55 years (SA2), 54 years (MCC LGA), 50 years (SA4) and 39 years (NSW).
- The proportions of younger residents aged 0 to 44 years are also markedly lower than those for NSW (37.6% (SA2), 39.4% (MCC LGA) 43.2% (SA4) and 57.9% (NSW) indicating a relatively small proportion of younger families residing in the area.
- These are offset by higher proportions of residents aged 45 years and older (62.4% (SA2), 60.6% (MCC LGA), 56.8% (SA4) and 42.1% (NSW)) and particularly those aged 75 years or older (33.3% (SA2 and MCC LGA), 29.9% (SA4) and 17.6% (NSW).
- There is a relatively higher proportion of Aboriginal and/or Torres Strait Islander residents, and residents of Aboriginal and/or Torres Strait Islander descent locally and regionally (6.6% (SA2), 6.7% (MCC LGA), 6.9% (SA4) and 3.2% (NSW). These people may have particular interest in the Project. Engagement has been initiated with the Forster Local Aboriginal Land Council (LALC) and the GWFPAC as part of the broader community engagement program supporting the Project. In addition, Registered Aboriginal Parties (RAPs) are engaged for the Project as part of the Aboriginal Cultural Heritage Assessment being undertaken for the Project. Ongoing engagement with these groups and/or other individuals or organisations is a recommendation of this SIA.
- There are no other population characteristics suggesting specific groups within the communities, whose interests may be more or less affected by the development and operation of the Project.
- There may be some individuals and business operators who benefit from the construction and operation of the Project.

4.9.3.2 Observations on household and family characteristics

Family and household data relate to the residential and housing arrangements of the population in an area.

Observations

- Household and family data are also characterised by indicators of the older populations. There are significantly elevated proportions of 'couple without children' families (55.5% (SA2), 53.5% (MCC LGA), 50.1% (SA4) and 37.9% (NSW)), which is consistent with the lower proportions of younger residents (proportions of children younger than 15 years of age were 13.9% (SA2), 14.5% (MCC LGA), 15.6% (SA4) and 18.2% (NSW).
- Single/lone person households are also higher in the SA2 (30.5%),MCC LGA (30.8%) and SA4 (30.1%) than for NSW (25.0%). This is associated with the larger proportions of divorced and widowed residents identified in Table 2 of Annexure 7, both of which are indicative of older residents.
- Household sizes (people per household) in the SA2 (2.2), MCC LGA (2.2) and SA4 (2.3) are smaller compared with the state (2.6), as a result of the lower levels of families with children and higher levels of households with one occupant.

4.9.3.3 Observations on income and housing related data

- Median weekly personal income is the same for the SA2 and MCC LGA ($564). Household and family incomes are marginally higher in the SA2 ($1,069 and $1,362 respectively) than the MCC LGA ($1,060 and $1,341). The SA4 has higher incomes for all categories ($591 (individual), $1,132 (household) and $1,421 (family), but these remain substantially lower than NSW levels ($813 (individual), $1,829 (household) and $2,185 (family).
- Regionally, these outcomes can be explained in part by lower workforce participation for the MCC LGA (48.6% of the working age population was not in the labour force in the 2021 Census), than for the SA2 (47.3%). The same measure for the SA4 was 46.1%. Each of these is substantially higher than for NSW (35.5%). This is another outcome of the older regional populations, which generally have larger representations of retiree households. To demonstrate this, the proportions of households in which both partners were not working were 35.8% (SA2), 40.6% (MCC LGA), 36.6% (SA4) and 22.9% (NSW).
- Further evidence that SA2 and MCC LGA household incomes are lower can be seen by comparing the distribution of lower incomes for each population. This is feature is consistent with the progressive increase in the size and diversity of the economic bases of the two larger populations. The proportion of households with low weekly gross income (less than $650 per week) is higher in the SA2 than for each of the larger populations. However, the difference is small between the SA2 (27.8%) and the LGA (26.4%), with the SA4 lower (25%), but remaining significantly higher than NSW (16.3%).
- 2021 ABS Socioeconomic Indexes for Areas (SEIFA) profiles for the SA2 and LGA indicate that both rank in the lower half of all comparative SA2s and LGAs

respectively. This is interpreted as being related to the lower incomes associated with older populations, but also to an extent to other factors, such as the more constrained access to services that are characteristic of relatively small regional populations.

- Combined home ownership (outright and under mortgage) is highest in the SA2 (74.4%) and progressively declines as the population area is expanded: (MCC LGA [72%]; SA4 [70.9%]; NSW [63.8%]). Conversely the proportion of households renting increases with the population observed, which is the inverse to ownership.
- Dwelling occupancy is comparatively low in the SA2 (84.8%) and MCC LGA (83.7%) compared with the SA4 (88.0%) and NSW (90.6%).
- Housing costs (weekly rent and monthly mortgage repayment) are lowest for the SA2 and progressively increase with the larger populations. This is influenced by the structure of the market for each area, with a larger population generally having a greater diversity of housing stock, and higher levels of competition for available housing.

Community and stakeholder engagement identified likely impacts on the local housing market, and particularly the rental market, during the Project construction stage. This is clearly related to the relatively large construction workforce for the Project, compared with both baseline housing market characteristics and those likely to prevail during the long term Project operational stage. This is discussed in greater detail in Section 6 (Impact assessment and prediction).

4.9.3.4 Observations on population projections

Data for the Mid North Coast SA4 were also analysed for this measure, given the potentially dispersed distribution of electricity produced by Project and the population this may serve. A summary of the data is presented in Table 17.

4.9.3.4.1 Total population

Projected population change is summarised in Table 17. Population growth for the SA2 is projected to be minor in scale (2.8%). The projected increases at MCC LGA (14.4%) and SA4 level (12.7%) are substantially higher in proportional terms, however, these remain well below projected statewide population growth (20.9%). Because the electricity generated by the Project would feed into the broader system, the benefit of this output would notionally be distributed across each population. At each geographic/population level, additional electricity generation would contribute to meeting demand driven by population increases.

Table 17: DPHI summary population projections 2021-2041

	Change (#)	Change (%)
SA2	143	2.8
LGA	13,687	14.4
SA4	28,606	12.7
NSW	1,706,176	20.9

4.9.3.4.2 Observations – population by age

- The data indicates continuing population ageing for each observed area.
- The 60 to 74 years age group remains the largest for both populations over the entire forecast period, despite declining slightly in proportional terms.
- In both populations, the three oldest age groups are also the largest, numerically, which is clearly consistent with the older population profiles.
- It is noted that for the, DPHI projects that between 2022 and 2041, the median age is forecast to increase from 53.5 to 57.6 years (SA2), 52.5 years (2021) to 54.7 years MCC LGA and 49.8 to 52.4 years (SA4), compared with an increase of 37.9 to 41.0 for NSW.
- The increases in the 75+ years and 45 to 59 years age group are apparent contributors to population ageing, as described in Section 5.2.3.1.
- The younger age groups are projected to decline in absolute and proportional terms in the SA2 and MCC LGA. This is more apparent for the SA2 population (0-14 years (-17.4%) and 15-29 years (-24.4%). For the larger areas the two figures are -1.3% and -3.2% (MCC LGA).
- Further evidence of this decline is contained in the DPHI forecasts for natural change (births less deaths) over the 2022-2041 period at -858 people (SA2), -12,434 people (MCC LGA), -23,102 people (SA4).

4.9.3.4.3 Working age population projections

The working age population is projected to decrease in the SA2, but increase in the MCC LGA, SA4 and NSW (Table 18). The decline in the SA2 working age population is interpreted as structural demographic change, related to relatively rapid population ageing. The effects of the closure of the SMC can be interpreted as one contributing factor in an environment of broad structural change. Although the Project would provide employment, the number of positions would be much smaller than that supported by the operation of the SMC and DCM.

Table 18: DPHI summary working age population (15-64 years) projections 2021-2041

	Change (#)	Change (%)
SA2	-188	-6.9
LGA	4,401	8.8
SA4	6,519	5.3
NSW	835,295	15.9

4.9.3.5 Observations on implied dwelling demand

Projected increases in the dwellings required to house population increases are an important justification for a project that will provide electricity to power those dwellings. In addition to population data, DPHI also publishes projections for the number of required dwellings over the projections period. The projections are described as 'implied' because they are based on the population projections. Data for the Mid North Coast SA4 were also analysed for this measure, given the potentially dispersed distribution of electricity produced by the Project. A summary of the data is presented in Table 19.

Table 19: Summary DPHI implied dwelling projections 2021-2041

	Change (#)	Change (%)
SA2	334	11.9
LGA	11,035	20.8
SA4	21,653	18.8
NSW	904,260	26.4

- Additional dwelling demand is projected to increase at a lower rate than for NSW as a whole. However, as noted in the discussion of the Project's social locality, the electricity produced by the Project would be broadly distributed, and would contribute to managing demand for sustainable supply of renewable energy across the distribution network.
- Projected proportional increases in implied demand are higher than projected population growth in each area. This is related to the projected decrease in household sizes; although total populations are projected to increase, driving demand to an extent, the additional implied demand is also in part a product of population ageing (lone person and couple-only households). Summary data on household size (people per household) is presented in Table 20. More detailed projections on population change by age group and household type are included in the Community Profiles annexure (Annexure 7).

Table 20: DPHI projected household size 2021-2041

	2021	2041
SA2	2.19	2.02
LGA	2.20	2.09
SA4	2.25	2.13
NSW	2.58	2.45

4.10 Summary comments on the social locality and social baseline

The MCC LGA is very dispersed in terms of its settlement pattern and thus the distribution of population centres. Stratford is approximately 90 kilometres by road from both Taree - Wingham and Forster - Tuncurry, the two largest population centres[21]. The LGA has a population density of 8.8 people per square kilometre (8.8/km^2), compared with 10.4/km^2 for NSW. Given this level of dispersal, it is assessed that the potential for effects of the Project on residents of the majority of the MCC LGA is unlikely to be material. As a result the community of Gloucester and surrounds is considered as the most likely to potentially experience impacts of any frequency or materiality.

The local community is assessed as being relatively typical of small regional communities. As the commercial centre for the immediate region, the Gloucester economy does have a degree of diversification that would be expected to allow a population of this scale to meet its core needs.

Demographically, the region has an older population, which is also typical of small, rural areas. It is noted that between the 2011 and 2021 ABS Censuses, the median age in the Gloucester SA2 increased from 50 years to 55 years (the change for NSW was from 38 years to 39 years). In the absence of economic stimulus to reduce the loss of mining as a major regional economic contributor, there is some prospect that the SA2 may continue to age and decline in population, as employment opportunities for young people become less available, and these people leave the SA2 for employment and related opportunities (such as education and training). This may negatively affect the viability of other businesses in the region. The Productivity Commission (PC) (2017) discussed such effects as follows:

> *Towns with fewer services become less attractive for residents. In the absence of a local industry or other social connections, people will often relocate closer to regional centres, and if the population becomes too small, a cycle of business closures and further population decline can set in. This is particularly true after the closure of critical services such as medical general practitioners, schools and post offices. This will sometimes lead to shrinking towns with rapidly ageing populations as younger people move away to where local employment opportunities lie. Providing basic services (including, for example, a flexible local bus service) can be important to those remaining in such towns*. (PC 2017:113).

[21] The Taree-Wingham population (combined SA2s) (2023) was 26,740. Forster-Tuncurry (combined SA2s was 21,074). (Data source: ABS Data by Region 2024. < https://dbr.abs.gov.au/ >

The eventual complete closure of the SMC and DCM, once decommissioning and rehabilitation are completed, will inevitably reduce the level of employment and economic activity in the local economy. The Project would provide relatively substantial activity over the construction period which may in part coincide with mine closure activity, or otherwise follow on from it. In combination, the two separate projects (the SMC and the Project) provide a transitional opportunity for the Gloucester region. The continuing operation of the Project thereafter would in part substitute for the cessation of mining in the region, although not entirely replicate activity levels in terms of permanent activity levels. However, there would also be the need for periodic additional activity (such as capital maintenance or renewal campaigns) that would introduce additional economic activity in the region.

5 The Project

5.1 Workforce required for the Project

It is anticipated that, during construction of the Project, an average of 300 Full-Time Equivalent (FTE) workers would be required over a period of around 48 months, with a peak of approximately 350 FTE workers.

During the operational stage of the Project, approximately 10 FTE workers would be required during normal operating hours. The operational workforce would increase to approximately 30 FTE workers during periodic maintenance activities.

5.2 Traffic movements for the Project

The peak construction workforce would generate approximately 360 light vehicle (720 vehicle movements) and 30 heavy vehicle (60 vehicle movements) to and from the Project site in a typical day.

The normal operation of the Project would generate approximately 10 light vehicles (20 vehicle movements) in a typical day. During scheduled maintenance, traffic numbers would increase, however this increase would be temporary.

A Construction Traffic Management Subplan would also be incorporated into the Construction Environmental Management Plan. This would address, for example, large scale vehicle movements and oversize vehicle movements.

5.3 Timing of the Project

General stages of the Project can be summarised as:

- Construction: the construction of the Project is anticipated to take approximately four years.
- Operation: the operation of the Project would generally continue for as long as there is demand for electricity produced by the Project (expected to be greater than 50 years).
- Decommissioning/rehabilitation: following the closure of the Project, infrastructure would be decommissioned and associated rehabilitation activities would occur across the Project site.

5.4 Environmental impacts associated with the Project

In addition to this SIA, the Project EIS is supported by the following specialist technical assessments:

- Soils, Land and Agricultural Impact Assessment.
- Surface Water Assessment.
- Groundwater Impact Assessment.
- Biodiversity Development Assessment Report (BDAR).
- Aquatic Ecology Assessment.
- Aboriginal Cultural Heritage Assessment (ACHA).

- Historic Heritage Assessment.
- Road Transport Assessment.
- Landscape and Visual Impact Assessment.
- Noise and Blasting Impact Assessment.
- Air Quality and Greenhouse Gas Assessment.
- Economic Assessment.
- Environmental Risk Assessment.
- Preliminary Hazard Analysis.
- Bushfire Management Assessment.

The environmental impacts associated with the Project are detailed in the specialist technical assessments listed above. This SIA considers environmental impacts that may have relevant applications to social impacts.

6 Impact assessment and prediction

6.1 Preliminary comment on the assessment of social impacts

In assessing all aspects of the potential for social impacts to potentially be imposed on communities or parts of these, it is necessary to acknowledge the subjective nature of how such impacts may be experienced and/or perceived. For example, in discussing assessment of the significance of social impacts, the DPHI SIAG[22] *Technical Notes* observe that social impact aspects '*typically have both subjective and objective components, as this will depend on people's individual experiences and/or perceptions as well as technical evaluations*' (DPHI SIAG 2023:12).

Stakeholder views may be informed by individual or collective perceptions and interpretations of how a development or certain aspects of it may be experienced by those stakeholders, or how it may affect them. An effect that is of concern to one resident may not be considered as significant or material by another nearby resident. The extent of effects may also be affected by a range of factors, including relative proximity to the source of effects, or individual experiences with, or beliefs about, activities or projects that are the source of effects. It should also be acknowledged that, despite all reasonable efforts and/or provisions for AMM of effects, some stakeholders may retain their initial attitudes or positions on the activities or project.

6.2 Assessment approach

6.2.1 Description of approach

Section 3 of this SIA reports on stakeholder engagement undertaken for the Project. These engagements produced various perspectives on the elements of the Project that community believes may positively or negatively impact on it. The engagement process was also used to progressively reference the community's views with the potential impacts assessed during the scoping process as likely to be relevant.
Stakeholder engagement featured direct participation by Yancoal personnel. This has also permitted a continuous process of feedback to occur, which has in turn supported refinement of the Project design as it has been developed. The resulting assessment and prediction of impacts has been facilitated by this iterative feedback process.

Based on the information received from these various sources, the main positive and negative Project impact assessments are summarised in Table 21. It is noted that there were other matters that were mentioned with less frequency than those addressed in the table. Where appropriate, the approach to addressing these matters was to frame the more frequently raised issues in terms that incorporate the less frequently raised issues, where this was appropriate.

[22] Social Impact Assessment Guideline.

6.2.2 Limitations of assessment

The reliance of the approach on the outputs of stakeholder engagement requires acknowledgement of the limitations of the engagement outcomes. Whilst they were widely distributed and open to any participants, there were relatively small attendances at open community information sessions, and a low participation level for the online survey. It is submitted, however, that input from a good representation of interest groups and key service providers in the community was achieved.

In planning engagement, it was understood that a sample of stakeholder views would be the outcome, although the size of that sample was unknown. Repeated efforts were made to encourage participation. In the event, notwithstanding its size, the sample provides the best available understanding of the community's position on the Project.

6.3 Impact assessment and prediction

Table 21: Impact assessment and prediction – discussion

Identified source of impact	Impact categories affected	Discussion of matters considered in assessment of social impact
Support for renewable energy projects in the Gloucester Valley/SREH	Surroundings; culture.	General support for renewables development was expressed in various elements of the engagement program. The potential positive impacts most specifically relate to surroundings, and the use of the SMC site for this purpose. There is also an assessed lesser cultural element ascribed to this impact, as implies that this is consistent with people's values in relation to support for renewables developments.
Solar farm (visual impacts)	Community; culture; health and wellbeing; surroundings.	Visual impacts of the solar farm were consistently identified as an issue of concern across all modes of engagement, with nearby land occupants most likely to be affected. However, the community generally considered that visibility of the solar farm from The Bucketts Way would detract from the visual amenity of the area, which is valued highly by the community. This may impact on surroundings (aesthetic value and amenity), community (sense of place), health and wellbeing (specifically in relation to nearby land occupants who may be most exposed to this effect) and culture (shared beliefs and values).
Solar farm (exclusion of alternative land uses)	Surroundings; livelihoods; decision-making systems.	Various sources indicate that there has been a perception in the community that suitable SMC[23] land would be returned to agricultural uses. There have also been a relatively large number of alternative uses proposed by stakeholders for land associated with the SMC (e.g. recreational and alternative industrial/commercial uses). From the perspective of those members of the community who may consider themselves affected, the impacts are assessed as being on surroundings (use of land); livelihoods (exclusion of potential productive agricultural use, noting that this effect would be limited to the specific party or parties with whom an agreement on future agricultural use was made) and decision-making systems (beliefs or perceptions in the

[23] This also applies to DCM land, which however, is not the focus of the Project.

Table 21: Impact assessment and prediction – discussion

		community that the land would be made available for alternative uses, with resulting concerns over information understood to have originated with Yancoal).
Solar farm (waste management – solar panel refuse)	Surroundings.	Relating to the disposal of PV panels if damaged or at the end of their economic life. Some feedback indicated that this is perceived as detracting from the net effect of the Project as 'renewable' energy infrastructure. This may impact on surroundings, to the extent that elements of PV panels that cannot be recycled may require disposal to landfill, for example.
Solar farm (maintenance requirements)	Accessibility; surroundings; livelihoods.	Questions were raised on the amount of water required for regular cleaning of PV panels to maintain optimal performance; opportunities for 'agri-solar' (grazing of suitable livestock on the solar farm site to manage pasture growth etc., noting that interested parties did not nominate suitable livestock for this purpose). Affects may include on accessibility (competing water uses); surroundings (use of land) and livelihoods (potential co-use for productive agricultural [grazing] activity).
Construction stage workforce (effects on housing)	Accessibility; livelihoods.	The relatively large temporary influx of workers to the area would increase demand and place further pressure on local housing stock, particularly rental properties. Affects may include on accessibility (ability of other community members to access and/or afford housing) and livelihoods (directly, may positively affect incomes of locally or regionally-based landlords, indirectly may prevent people from moving to the area to work etc.).
Construction stage workforce (effects on accommodation and tourist activity)	Accessibility; livelihoods.	Part of the workforce may absorb a substantial proportion of tourist accommodation, potentially negatively affecting tourist activity. Potential effects are on accessibility (for people visiting the area for other purposes) and livelihoods, the effects of which may vary. Accommodation providers may benefit from consistently high occupancy, whereas some tourism-centred business may be negatively affected.
Construction stage workforce (effects on local businesses and service providers)	Way of life; accessibility; health and wellbeing; livelihoods.	The effective increase in population would increase demand for goods, services and public infrastructure and utilities. Impacts may be on way of life (people's lifestyles, including their ability to meet their personal needs); accessibility ('competition' for

Table 21: Impact assessment and prediction – discussion

		access to retail services, for example); health and wellbeing (the ability to access health services given higher demand, which may result in negative health outcomes); livelihoods (positive increases in activity and incomes for business proprietors; potential increases in employment). Generally, it is assumed that local businesses would adapt to manage the temporary change in circumstances. As such, the effects are assessed as being approximately neutral for the community generally, and positive for those parts of the community involved in servicing the additional demand.
Construction stage workforce (temporary change in demographic structure of the population)	Way of life; community; health and wellbeing; surroundings.	The construction workforce is likely to be demographically different from the resident population (younger, predominantly male and potentially with comparatively higher incomes). Effects may be on way of life (how people interact with each other); community (effects on community cohesion and how the community functions); health and wellbeing (effects on people vulnerable to substantial change); surroundings (possible perceived or actual effects on public safety and security and access to the built environment in particular). The effects may be variously positive or negative.
Operations stage workforce (permanent and periodic)	Community; accessibility; livelihoods.	The permanent operations stage workforce is presumed as likely to have positive local impacts. These are likely to be on community (permanent jobs would help maintain community function by maintaining demand for access to services etc.), and livelihoods (both directly for employees and indirectly for economic and employment activities supported by employee incomes and business surpluses). Additional personnel required for periodic maintenance (for example, would also positively affect livelihoods through creating additional economic activity. Although these workers may reduce accessibility to short term accommodation for other users (such as tourists), the frequency and intensity of this use would be lower than that for the construction stage.

Table 21: Impact assessment and prediction – discussion		
Impacts of Yancoal's investment in the region	Way of life; community; livelihoods.	As a post-mining investment in the region, there were positive views on the Project relating to business activity, employment and 'keeping people in town'. Positive social impacts are on way of life (how people live and work); community (how the community functions and its resilience to change imposed by the closure of the SMC and DCM); and livelihoods (direct benefit to employees and their households, and derived benefit from those households' consumption activity in the regional economy and benefit to businesses in terms of employment and earnings).
Aboriginal cultural heritage impacts and related community impacts	Community; culture; health and wellbeing.	Advice received from GWFPAC is that there is one possible significant Aboriginal cultural heritage site in the vicinity. There is potential for negative impacts on the community in terms of its sense of place. The potential to preserve the Aboriginal cultural heritage site may avoid these impacts. There may also be other sites or artefacts in the Project area that can also be preserved. Culture and health and wellbeing impacts may also impact on members of the GWFPAC and potentially other members of the local Gloucester Worimi community.
Biodiversity impacts (particularly construction of the upper reservoir and subsequent inundation)	Community; culture; health and wellbeing; surroundings.	Development and inundation of the upper reservoir would necessarily involve the impacts on existing natural assets including flora and fauna and potentially affect aquatic species in the existing lower reservoir, when it is pumped out. Effects on surroundings would involve the dam area itself, and may also impose visual impacts on some parts of the surrounding area.
Potential overspill of upper reservoir/flooding	Surroundings.	Question on potential for impacts on properties in the area. Impacts on surroundings (public safety and security and potential erosion and flood-related impacts).
Construction stage traffic (The Bucketts Way)	Way of life; accessibility.	The construction stage would entail movements of plant and equipment, Project componentry and workers over the construction period. This may cause temporary constraints on the resident community in terms of way of life (i.e. how people get around) and accessibility to the road infrastructure itself. Given the relatively modest operations-stage workforce, it is likely that these impacts would resolve themselves once operations begin. A Construction Traffic Management Subplan would also be

Table 21: Impact assessment and prediction – discussion

		incorporated into the Construction Environmental Management Plan. This would address, for example, large scale vehicle movements and oversize vehicle movements.
Beneficial reuse of the SMC site	Community; surroundings.	A substantial proportion of engagement participants viewed reuse of land associated with the SMC as a positive outcome. This may contribute positively to sense of place, and also be perceived as a less impactful use of the site, compared with prior mining use, thus enhancing perceived surroundings.
Concerns with engagement process	Decision-making systems.	Concerns were raised by a limited number of engagement participants in relation to the timing and extent of engagement. This was in some instances related to the matter of exclusion of alternative land uses in relation to the solar farm and perceptions that the site would be used for other post-mining activity. Decision-making system impacts from the perspectives of these participants were negative, in that there may be perceived insufficient opportunity to consider the Project, and that SCPL/Yancoal has not been clear on its intended post-mining use of land associated with the SMC.
Yancoal/SPCL should maintain communication with the community in relation to the Project	Decision-making systems.	Ongoing communication with the community at preliminary, construction and operating stages of the Project is likely to positively influence community attitudes to the Project. This may in turn have positive implications for Yancoal's SLO with respect to the Project.
Contribution to NSW/NEM supply and system stability	Accessibility.	Net positive contribution to electricity supply and system reliability.
Contribution to meeting NSW Government emissions reduction targets	Accessibility.	Positive contribution to increasing total renewable generation capability.

7 Social impact enhancement, mitigation, and residual impacts

7.1 Summary assessment of impact significance

Annexure 6 presents a summary of the assessments of impact significance. The pre-mitigation impacts and avoidance, management and mitigation measures are outlined in Table A6.1. The parts of the SIA addressing each impact are also identified. Table A6.2 presents the summary social impact risk assessment with pre- and post- mitigation ratings and status as positive or negative, for each impact. Both sets of assessments have been developed with reference to input from Yancoal and other Project team members, based on their respective areas of expertise on various impacts.

7.2 Project enhancement and mitigation features

7.2.1 Physical project elements

Section 1.4 of the Project Scoping Report includes the following description of Project features that would serve to enhance the benefits of the Project, while simultaneously mitigating potential negative impacts.

Avoidance and impact minimisation measures for the Project would be finalised in the EIS, including:

- *Beneficial re-use of water contained within mine voids to initially fill and to top-up the PHES when required, avoiding reliance on external water sources.*
- *Management of water within the PHES, to prevent uncontrolled discharge to surface drainages and to minimise seepage to groundwater.*
- *Controlled release of water from the PHES, as required to maintain suitable freeboard in the upper and lower reservoirs during periods of prolonged wet weather.*
- *Use of the existing SMC access road for construction and operational traffic entering the site via The Bucketts Way, to minimise impacts to other traffic users.*
- *Maximising the use of existing SMC infrastructure for carparks, laydown areas, internal access roads, etc. to minimise additional disturbance associated with the Project.*
- *Upgrade of existing access tracks to facilitate construction of the upper reservoir to avoid constructing new tracks.*
- *Use of a tunnelled waterway rather than above-ground pipes, to minimise disturbance and visual impacts.*
- *Vegetative screening as required to minimise visual impacts along The Bucketts Way and any significantly affected private residences.*

The Project would also include development of a biodiversity offset strategy as per the NSW Biodiversity Conservation Act 2016 *(BC Act).* (Yancoal 2023:9).

In addition to the existing SMC infrastructure identified above, the Project would also use:

- water pipelines, water management system, such as sediment and erosion controls;
- access roads;

- office facilities;
- services and utilities; and
- 33 kV/11 kV power supply and communications infrastructure.

The Project would also involve the upgrade of the existing Stratford East Dam for the lower reservoir and the use of recycled onsite water for solar farm maintenance/cleaning.

The engagement program undertaken after preparation of the Project Scoping Report indicates that the beneficial reuse of land associated with the SMC, as the initiatives above can be broadly categorised as, is perceived positively within the community.

Engagement also identified some perceived limitations to certain initiatives, such as vegetative screening in relation to the solar farm. In recognition of Project limitations, the Project has already been adapted to reduce impacts, such as through the removal of parts of the solar array from the Project plan, to reduce visual impacts. This is consistent with the approach to responding to social impacts indicated in the SIAG[24].

7.2.2 Project management approaches

Management approaches that are recommended to be considered to enhance, benefit and contribute to social impact mitigation for the Project, include:

- Ongoing community engagement including during the approval process and both the construction and operational stages of the Project.
- Development and implementation of a Construction Workforce Accommodation Strategy.
- Development and implementation of a Construction Environmental Management Plan, incorporating a Construction Traffic Management Subplan (e.g. for oversize vehicle movements).

7.3 Responses to most commonly identified impacts

This section includes detailed analysis of the main potential impacts identified by stakeholders during the engagement process. Considered in this context, there is some justification for placing specific emphasis on these impacts. Other impacts are addressed in the summary of impact significance (Annexure 6).

7.3.1 Solar farm impacts

7.3.1.1 Solar farm visual impacts

As noted in Section 3, individual and group stakeholders identified impacts of the solar farm as the matter of most apparent concern. This resulted in an initial removal of the section of the solar farm proposed on the western side of The Bucketts Way (when compared with the Project Scoping Report), with the aim of reducing the overall visual impact. Further, and following additional stakeholder engagement, an area of the solar farm adjacent to The

[24] SIAG Technical Supplement states, *inter alia*, 'Responses to negative social impacts might include adapting some aspects of project design. . . ' (2023:14).

Bucketts Way (on the eastern side) with higher visibility was also removed from the Project. Despite this, engagement indicated that concerns remain, even in relation to areas of the SMC site where existing mature tree/vegetation screening would reduce visual impacts to some effect. Vegetative screening is now proposed in this area of the solar farm originally proposed adjacent to The Bucketts Way (on the eastern side), to further mitigate visual impact.

With respect to individual nearby land occupants, Yancoal has initiated a process of direct contact, offering to generate imagery on visibility of the solar farm (and other Project elements) from the relevant properties as part of a Landscape and Visual Impact Assessment for the Project (GHD Pty Ltd [GHD], 2024a). A similar approach to establishing visual impacts from public viewpoints, and in particular relevant parts of The Bucketts Way was also undertaken.

The Landscape and Visual Impact Assessment (GHD, 2024a) also concludes the following:

- Visual impacts at private residences were assessed as “low” or “very low” at all private residences.
- Visual impacts from the closest point to the Project along The Bucketts Way was assessed as “moderate” in the absence of additional visual screening. When including the proposed visual screening for the Project the visual impact was assessed as “very low” or “low”.

The Landscape and Visual Impact Assessment (including photo simulations) (GHD, 2024a) forms an appendix to the Project EIS and will be made available to the public as part of exhibition of the Project EIS.

7.3.1.2 Operational waste – solar farm

The management of end-of-life or damaged solar panels was also a matter of concern to some stakeholders. The construction and operation of the Project would generate a range of waste streams that would require appropriate waste management. The Project would use the general hierarchy of waste management and minimisation principles of avoid, reduce, reuse and recycle, to minimise the quantity of waste generated by the Project.

Waste generated during the Project operation would be significantly less than Project construction, due to decreased number of workforce at the site. Operational waste streams would be limited to those generated by operational and scheduled maintenance activities, including:

- solar panel packaging from the scheduled replacement of solar panels during the operation;
- replaced solar panels, following the end of their expected lifespan;
- replaced electrical and mechanical components from the scheduled maintenance;
- general office and workshop waste;
- general green waste from vegetation management; and
- bio-waste from on-site sanitary facilities.

These waste streams would be managed on the basis of avoid, reduce, reuse and recycle. During the operational life of the Project, recycling and reuse facilities for solar panels may advance in Australia. The future growth of solar panel recycling facilities would be considered throughout the life of the Project to inform potential recycling and reuse opportunities.

7.3.1.3 Construction Waste – construction of solar farm and other Project elements

The construction phase of the Project may include the following waste components:

- excess waste rock from the excavation of the tunnelled waterways, powerhouse silo and reservoirs;
- vegetative waste from vegetation clearance;
- cardboard and plastic packaging waste (e.g. solar panel packaging, etc.);
- scrap metal and electrical/cabling waste;
- concrete waste; and
- general waste (food scraps, cans, glass bottles, plastic).

Excavated material won on-site would be used for construction, wherever possible, with excess to be temporarily stored in stockpiles in the construction sites, before being transported via truck and disposed of in the SMC mine voids. Cleared vegetation would be mulched and used as part of rehabilitation activities, where it is feasible to do so. Any excess vegetation waste that could not be used on-site would be transported off site to appropriately licenced local green waste facilities.

Other solid waste would be collected, separated and transported to off-site licenced waste facilities.

The existing SMC sanitary facilities would be used during construction activities. Bio-waste from on-site sanitary facilities would be collected in tanks, and transported to off-site licenced disposal facilities.

7.3.2 Construction stage workforce impacts

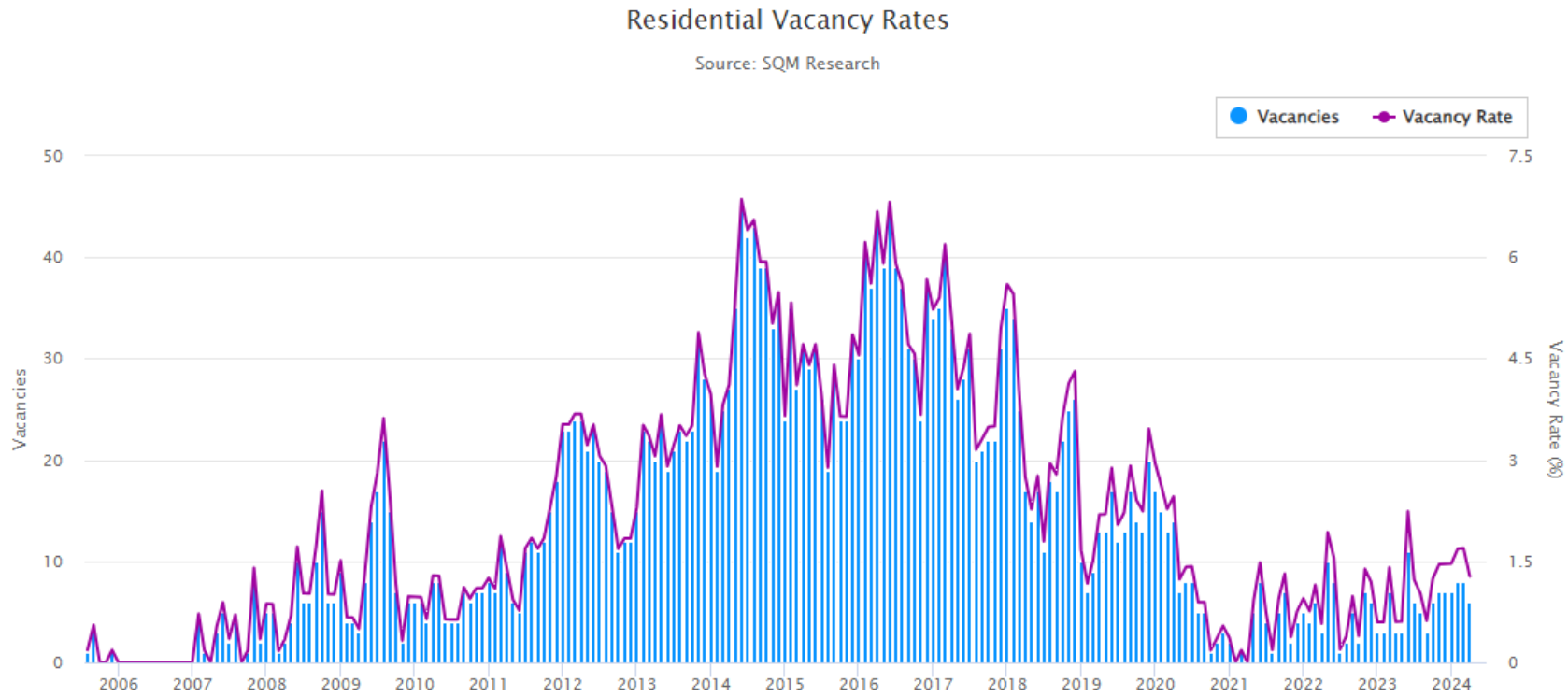
Management of the construction workforce would require detailed prospective planning prior to project commencement. Figure 3 shows that the residential vacancy rate in the 2422 Postal Area (POA) (Gloucester area) has seldom been above 1.5% since late 2020. The most recent figure (April 2024) is 1.3%[25].

[25] The data were generated by SQM research, and accessed via DPHI *Current housing pressures in NSW* webpage < https://www.planning.nsw.gov.au/policy-and-legislation/housing/housing-supply-insights/quarterly-insights-monitor-q2/current-housing-pressures >. An image of the POA is included in Annexure 1.

Figure 3

RESIDENTIAL VACANCY RATES

POSTCODE 2422



Source: SQM Research 2024

A research project conducted for the Australian Housing and Urban Research Institute (AHURI), *Housing market dynamics in resource boom towns* (Haslam McKenzie et al, 2009), provides some potential insights into management of impacts. The report specifically focuses on 'mining towns', however it does include analysis on shorter term mine construction and short mine-life projects that have some relevance to considering management of effects for the Project. Relevant observations from the conclusions and policy implications of the report include:

- *[FIFO and][26][27] DIDO approaches are 'particularly suitable where the labour force requirements are time limited', including where*
  - *'workers are employed during the construction phase of new mines. . . '*
  - *'workers are required for a specific project or temporary increase in production'* (Haslam McKenzie et al 2009:95-96).
- '*Application of [FIFO and] DIDO employment practices do not avoid the need to address housing issues. Rather, they necessitate provision of accommodation for the workforce while on roster. This in turn raises questions about appropriate location and accommodation standards that are compatible with the interests of workers, the local community and mining companies*' (Haslam McKenzie et al 2009:96).
- '*Consistency in definitions and acceptable uses for different accommodation types and an appreciation of the implications of inappropriate uses are important in planning for the best mix of accommodation supply. Standards and location/proximity of temporary accommodation to town or mine sites are key issues. Quarantining accommodation in caravan parks and motels for resident and visiting non-mine workers are also important considerations*' (Haslam McKenzie et al 2009:96).

Applying the AHURI findings to the Project construction workforce, several observations are offered:

- Given the relatively short duration of the construction stage of the Project, it is unlikely to be feasible to significantly add to permanent housing stock in the area in order to accommodate the workforce over Project construction timeframe. This may result in subsequent oversupply of housing, which may distort the local and regional housing market (e.g. Haslam McKenzie et al 2009:87-88).
- There is some prospect that a suitable workforce can be sourced from within the adjacent Newcastle and Hunter Valley region, given the region's industrial base. This is interpreted as indicating that it is reasonably likely that a material element of the workforce would be DIDO. An additional influence is the preference of 'workers and their families to be based in capital cities or seaboard centres' (Haslam McKenzie et al 2009:90). It is concluded that these factors would necessitate

[26] Fly-in fly-out (FIFO)
[27] Given the large and diverse industrial economy of the adjacent Hunter Valley, it is assumed that a substantial proportion of the Project workforce would originate there, and would therefore be a DIDO workforce. References to FIFO approaches are bracketed to indicate exclusion.

development of a workforce accommodation approach centred on the 'on-roster' workforce, as indicated by AHURI.

- In attempting to achieve a balance between the potentially competing housing needs of the local community and the temporary workforce, it is likely that some potential benefit in terms of economic activity in Gloucester and surrounds would be foregone, due to the predominantly DIDO structure of the construction workforce. However, this may also reduce the potential for other negative social impacts including impacts on housing availability and affordability (Haslam McKenzie et al 2009:91), and other social problems associated with the isolation of the workforce from their usual environs (Haslam McKenzie et al 20090:92). It would also mitigate against any negative 'post-boom' impacts, when compared to a scenario of semi-permanent occupancy over the construction period.

In relation to 'post-boom' outcomes (i.e. post-construction in this instance), AHURI also identified that:

- '*The factors that emerged as likely to contribute to the longer term sustainability of mining towns in this study include:*
  - *whether the town existed prior to mining. Did it have a pre-existing purpose, such as being a regional hub?*
  - *the nature of the town's economic base. Is it a one-industry or one-mine town that will only exist for the life of the mine?*
  - *the strategic significance of the town. Is it a regional support centre for other industries or a government service centre?*
  - *the town's attractiveness and natural attributes. Is it likely to remain an attractive 'lifestyle' location?*
  - *whether it is on a major transport route; and*
  - *proximity to coast, other major centres, tourist routes or attractions*' (Haslam McKenzie et al 2009:98).

An assessment of the Gloucester region based on these factors strongly suggests that the region would remain sustainable after the progressive succession of SMC and DCM closure and post-mining work, and construction of the Project. Part of this capacity for sustainability would be the permanent economic and employment contributions of the Project in operational mode.

7.3.2.1 Indicative management approach

Yancoal has significant experience in the development of mining projects. By nature, these involve regional sites, which present similar management questions to the Project. It is therefore presumed that Yancoal is well positioned to understand and address this aspect of the Project.

In addition, given the scale and nature of the Project, it is presumed that the lead and possibly subordinate construction contractors would have substantial experience in workforce management on comparable infrastructure projects that can be applied to the

Project. This requirement can be incorporated into tender documents as a condition of appointment.

Assuming appointment of contractors with suitable experience, the collective experience described above is assessed as likely to support the development and implementation of a suitable CWAS to manage this element of the Project. The CWAS would include identification of:

- the requirements of the construction workforce accommodation;
- available short term and long term accommodation; and
- strategies to manage the accommodation of the construction workforce and any associated impacts.

7.3.3 Biodiversity and Aboriginal heritage impacts – upper reservoir

7.3.3.1 Biodiversity impacts

As noted in Section 3, individual and group stakeholders also indicated concern for impacts on biodiversity associated with the Project. The Project has been designed to maximise the use of previously disturbed areas associated with the SMC to minimise new disturbance associated with the Project. In particular, the footprint of the solar farm has targeted areas previously disturbed by the SMC, including on the Stratford Waste Emplacement, infrastructure areas, Western Co-disposal Area, and the Stratford East Open Cut and Bowens Road North Open Cut (once backfilled). Overall, approximately 60% of the solar farm is located on SMC disturbed land.

For portions of the solar farm not proposed on land disturbed for the SMC, the Project has maximised areas previously cleared for agriculture and dominated by non-native vegetation. Approximately 184 hectares (ha) (91%) of the solar farm facility (not on SMC disturbed land) is mapped as non-native vegetation.

Where possible, and through iterative review of the Project layout and baseline environmental survey data, individual areas of vegetation have been avoided to reduce impacts of the Project on areas of higher quality biodiversity value.

A BDAR (GHD, 2024b) has been prepared for the Project to assess impacts of the Project on biodiversity and forms an appendix to the Project EIS. The BDAR (GHD, 2024b) will be made available to the public as part of exhibition of the Project EIS.

In addition, the Project would provide biodiversity offsets for residual impacts to biodiversity in accordance with the BC Act. The Project would target land adjacent to Project for biodiversity offsets to maximise local biodiversity gains associated with the establishment of offset properties.

7.3.3.2 Aboriginal cultural heritage impacts

As noted in Section 3, individual and group stakeholders also indicated concern for impacts on Aboriginal cultural heritage associated with the Project.

As part of the field surveys associated with the ACHA for the Project (Niche Environment and Heritage [Niche], 2024) , one new area of Potential Archaeological Deposit (PAD) was identified within the Project Subject Area for the ACHA, designated (SREH-PAD-1). While no artefacts were identified, SREH-PAD-1 was assessed as having the potential to contain intact subsurface deposits due to intact soils at the site (Niche, 2024). The soil outside of the SREH-PAD-1 boundary is less intact with areas of sheet wash erosion promoted by the slopes, which has disturbed or removed the "A horizon" soil profile due to clearance for agricultural activities (Niche, 2024). Therefore, there is a clear spatial delineation of the extent of SREH-PAD-1. The Project layout was refined to avoid direct and indirect disturbance of SREH-PAD-1.

Similarly, a location known as CTS 1 was considered by some Aboriginal stakeholders to have cultural significance, although this view was historically not consistently held by other members of the Aboriginal community (Kayandel Archaeological Services, 2012). The Project would avoid direct disturbance to this location (plus a buffer zone).

The ACHA (Niche, 2024) forms an appendix to the Project EIS and will be made available to the public as part of exhibition of the Project EIS.

7.4 Residual social impacts

From the perspective of local and regional impacts, the Project would effectively become a permanent feature of the Gloucester region. Accordingly, a number of the positive and negative impacts identified and assessed in this SIA would entail long term residual impacts. There are various factors that influence the extent of these residual impacts, which include:

- Community attitudes and how these may change over time. Community acceptance is suggested to resemble a 'U-shaped curve', which is characterised as attitudes '*ranging from very positive when people are not confronted by a local proposal, to less positive when people experience an application, to more positive again following construction*' (Windemer 2023:2[28]). This model is applicable to the Project, given the reasonable degree of expressed support for renewables development at Project inception and the unfavourable response to the solar farm element specifically, once proposed. The extent to which acceptance may increase over time from the current situation remains to be seen. This may be influenced by acceptance of and/or amendments to planning for the solar farm that may mitigate impacts.
- The relativities between the previous/current mining use of the site and the Project, in terms of what is perceived as the more socially acceptable use.

[28] This paper specifically addresses wind farms as the renewable energy infrastructure type of interest. The article includes a literature review on various sources considering this model.

- The extent to which the Project would contribute to an economic 'softer landing' in the wake of mine closure and completion of decommissioning and rehabilitation activities (i.e. the perception of the 'net effect' of the proposed post-mining use).
- The perceived and actual effectiveness of AMM strategies emplaced to eliminate or reduce impacts.
- Distributive factors, as to which societal groups are positively or negatively affected.

Assessing the Project's residual impacts is contingent on the combination of factors including those noted above. By definition, residual impacts are at post-AMM levels[29]. This assumption is the basis for the following assessments.

7.4.1 Positive residual impacts

Assessed positive residual impacts associated with the Project and their distribution are assessed as follows:

- Additional electricity generation capacity, which benefits all users of the electricity grid, including local and regional users.
- Permanent contribution to the transition to renewable energy sources, which is a society-wide benefit.
- Permanent and regular periodic (e.g. maintenance) employment, with direct benefit to employee households and indirect benefit for businesses with which these households transact.
- Potential commercial activity with locally and regionally based goods and services providers, with direct and derived employment and economic benefits.

7.4.2 Negative residual impacts

Assessed negative residual impacts associated with the Project and their distribution are assessed as follows:

- The 'opportunity cost' of foregone alternative uses of the land, particularly the area associated with the solar farm. Based on engagement outcomes, this is a matter of concern to a small proportion of local stakeholders, therefore the distribution of this effect is significantly limited. The potentially most affected party/ies notionally would be the alternative users of the site, who would presumably gain economic benefit from land use. Again, this would notionally be a very small number of beneficiaries.
- Visual effects of the solar farm which, on the evidence gathered, may remain problematic for some local stakeholders and potentially to some visitors, to a lesser extent.
- Biodiversity issues, such as the loss of vegetation and habitat relating to upper reservoir construction. The effect of this may impact local stakeholders, particularly those with specific interest in conservation and some property owners who may experience visual effects. There is some likelihood that this may also be of ongoing concern to interested parties in other areas.

[29] E.g. DPHI SIAG (2023:24)

- The potential for impacts on Aboriginal cultural heritage sites and/or items.

8 Cumulative social impacts

Given the nature of the Project and the prior use of the site, similar complexities are factors as for assessing residual impacts also have some relevance in assessing cumulative impacts. In summary terms, the impacts relating to the closure of SMC and DCM are to be considered as 'net of' the impacts of the Project. For example, part of this complexity is that although the SMC site is no longer used for mining, there is decommissioning and rehabilitation activity that has commenced and will continue for four to five years post closure, but which is not nominally part of the Project. As a result, the approach taken to the assessment is focused on the Project, using the incremental assessment approach, as identified in DPHI's *Cumulative Impact Assessment Guidelines for State Significant Projects* (2022).

8.1 Potential cumulative impacts: construction stage

Project construction would result in effects including noise and vibration, and particulate emissions (e.g. dust and vehicle emissions). These would be incremental to the similar effects involved in rehabilitation activity, to the extent that the two project programs overlap. The impacts would be limited to the duration of the construction period.

SCPL's decommissioning and rehabilitation activities are the subject of detailed operations plans that include provision for managing impacts such as dust and noise generation. Similarly, it would be necessary to institute a Construction Environmental Management Plan (CEMP) to manage impacts from the construction phase of the Project. It is considered as likely that the lead construction contractor appointed by Yancoal for the Project would have significant experience in this form of infrastructure development and its impacts. As such, the contractor would be assumed to be in a position to produce and implement an effective CEMP.

8.2 Cumulative impacts, additional land clearing

The SMC site is already disturbed, although rehabilitation would progressively improve the condition of the site. There would be necessary land clearing required for construction of the upper reservoir and some possible impacts in relation to the construction stage for the tunnelled waterway. Impacts identified in relation to biodiversity would be cumulative in relation to the baseline conditions.

8.3 Cumulative impacts of the Project and other projects

At the time of submitting this SIA for lodgement, there were no known other major infrastructure projects planned for the Gloucester region. As noted in Section 8.1.1, depending on the time required for consent determination, preliminary Project processes and Project initiation, there may be some temporal overlap between the Project and SMC rehabilitation. The likely effects of such coincidence of projects are also discussed in Section 8.1.1.

It is noted that during the course of community engagement, some comment was made on the effect on the community of successive major project proposals made in the Gloucester region. In particular, the AGL coal seam gas project, and the Rocky Hill mining project (neither of which proceeded) were identified as having imposed a cumulative burden on the community and particularly on those parts of the community who actively opposed these projects.

8.4 Cumulative impact on the broader social localities

In the context of the broader social localities (defined as MCC LGA and NSW), the cumulative impact of the Project is assessed as being positive overall. This is primarily as a result of the additional electricity generation capacity that the Project would contribute to the NEM. In its own right, the Project would make a relatively modest contribution to total system capacity. However, in the context of the energy transition, each project, including the SREH, notionally provides a beneficial cumulative contribution to the future provision of electricity to the NSW population and across populations serviced by the NEM more generally. The notional incremental benefits include increased system capacity and reliability.

On this basis, it can also be concluded that this cumulative impact positively serves the public interest. This is particularly the case given the commitments made by the State of NSW with respect to the energy transition task.

8.5 Summary of cumulative impact assessment

The potential for cumulative social impacts is viewed from the baseline situation of a more impactful use ceasing on land associated with the SMC, to be succeeded by interim decommissioning and rehabilitation activity and Project construction, and finally, the less impactful Project in operational mode. In this context, it is assessed that the potential for cumulative impacts is limited to a small number of potential sources of impact, the likelihood of some of which occurring is contingent on temporal overlaps between the Project and rehabilitation of the SMC.

From the perspective of the broader public, the Project would result in positive outcomes. These include contributions to the energy system in terms of capacity and stability, and the contribution to meeting the State's renewable energy commitments.

9 Monitoring and management framework

9.1 Preliminary comment

As is to be expected of a corporation of Yancoal's scale, the company has highly developed systems of risk management for all aspects of its business. It is assessed as very likely that the principles used in preparation and operationalisation of mining related systems can be effectively adapted for the specifics of the Project. The company also has the resources to obtain specialist input to contribute to this process. Yancoal is therefore well positioned for the development of appropriate monitoring and management structures for the Project.

9.2 Monitoring structures

9.2.1 Ongoing stakeholder engagement

It is inevitable that the Project would create expectations among the local community and other stakeholders. The most effective and efficient means for managing these expectations is through continuing stakeholder engagement. Wall (2012) provided a sound description of this approach: '*By looking at stakeholder engagement as a risk management tool, rather than a response to an already degraded relationship with the community, this allows projects to be more in control of the messages they are sending to communities, and to carefully monitor where expectations may be running ahead of reality. Although unrealistic community expectations may be unavoidable, they can be managed and mitigated in a way that allows for constructive community engagement throughout a project lifecycle*'.

To be most effectively executed, engagement based monitoring should both disseminate accurate information, and encourage feedback.

As noted in Section 3.6 and 3.7, Yancoal has already activated a suite of stakeholder engagement channels, which have been applied in the early stages of the Project. These channels should be maintained, and augmented where possible, to ensure that stakeholders are furnished accurate and timely information on the Project during the several stages of its construction and operations and provided with mechanisms and opportunities to further engage with the Project.

As part of the engagements with community representative groups, the GBC proposed the establishment of a CCC or equivalent group, to facilitate communications between Yancoal and the community.

9.2.2 Site specific Project impacts – construction and operations stages

It is assumed that specialist technical reports for the Project will each include recommended monitoring approaches and/or structures for reducing the risk of impacts and for response where necessary. It is also assumed that Project operation would be governed by a detailed plan of management, and construction stage impacts governed by a CEMP. To the extent that these can be practically applied to monitoring for the risk of their specific potential impacts and any possible social impacts that these might entail, these are endorsed and their implementation is encouraged.

10 Conclusions and recommendations

10.1 Conclusions

The broad benefits of the Project include:

- The long term beneficial reuse of the SMC site.
- Investment in the Gloucester region that supports a level of sustainable long term employment and economic activity.
- Investment in the State's transition to renewable energy, which is consistent with commitments made by the State of NSW to emissions reductions.

The nature of the Project is such that it would involve the differential distribution of Project impacts across its several social localities. Locally and regionally, there would be more apparent positive and negative social impacts compared with the beneficial impact that would be distributed across the NSW and the NEM more broadly. In terms of materiality, this broader impact would be beneficial, as stated, but not of significant impact of itself.

10.1.1 Social impacts – Gloucester region

There is general in-principle support for a PHES project on the site within the region. However, there is consistent opposition to the requirement for a large scale solar farm to support the PHES.

The main issue of contention with the solar farm is its visual impacts. Changes have already been made to the solar array to reduce this impact in response to earlier engagement and community feedback. Other effects of interest are the disposal of waste from replaced PV panels, and perceptions within parts of the community that the site was to be used for alternative purposes post-mining, with agricultural use being the most commonly cited of these uses.

With respect to waste from PV panels, a waste management strategy would address this issue. Regarding alternative land uses, various potential uses were canvassed during stakeholder engagement. Some of these, such as certain alternative industrial and recreational uses would also involve some level of intensive use. However, it is noted that the HRP specifically identifies use of the SMC and DCM sites for renewable energy Projects (HRP, p.159).

The second matter of significance to the community is the potential effect of the relatively large temporary workforce coming into the area over the construction stage. Despite general recognition of the possible impacts that this would have in terms of demand for local services, and in particular, housing and accommodation, it is concluded that, on balance, the community has a level of confidence that it can manage this period and achieve a positive outcome.

10.1.2 Social impacts – NSW and the NEM

The Project is consistent with the State's commitment to increasing renewable energy supply. It has positive implications for all electricity consumers in NSW and the NEM in terms of service reliability. The negative implications for these broader elements of the social locality are assessed as those relating to the loss of some level of biodiversity and heritage values. It is submitted that at this broader level the materiality of the beneficial contribution is likely to outweigh that of the potential social cost. On balance, the overall social impact of the Project is therefore assessed as being positive at the level of the NSW population.

10.2 Recommendations

10.2.1 Ongoing stakeholder engagement

A structured approach to continuing stakeholder engagement and information provision will be required throughout the various stages of the project. As identified in the SIA (e.g. Section 9.2), in the course of undertaking engagement to support development of the EIS, a number of engagement channels and contacts with relevant stakeholders have been established. These provide a base from which to program stakeholder information and engagement.

The engagement process has generated a large amount of information in relation to stakeholder views on the project. As part of continuing project engagement, provision for progressively monitoring stakeholder responses should be included in the engagement structure. This will allow tracking of any changes in stakeholder positions, particularly in response to changes proposed by Yancoal/SREH to address stakeholder concerns.

Among the stakeholders contributing to the engagement process, there are a number of community representative groups that have critical interests in the project, such as the GWFPAC. It is essential that these groups are engaged in the process at all stages of its development and operation.

10.2.2 Ongoing community information

Feedback received during stakeholder engagement indicated that there is a generalised level of awareness about it in the Gloucester region. However, there is limited understanding of the detail of the project, particularly in relation to its potential positive and negative impacts.

Yancoal has commenced issuing community newsletters on the Project. Part of the continuing focus of these newsletters should be the provision of 'plain English' project description material (acknowledging the inherent complexity of the Project). A relatively simple means for doing this is issuing information in a 'Frequently Asked Questions' (FAQ) format. This can either be as a single issue (for example, to coincide with lodgement of the EIS) and/or, on a continuing basis in successive issues. Project engagement to date has generated sufficient material to support development of FAQs for distribution.

10.2.3 Construction Workforce Accommodation Strategy (CWAS)

There is the potential for a number of both positive and negative impacts from the presence of a temporary construction workforce in Gloucester. This is a key matter of stakeholder interest. The development of a CWAS could propose practical approaches for managing or mitigating these impacts.

This SIA assumes that there is a level of experience within Yancoal of managing similar circumstances. It was also observed that experience and input from construction contractors may also be relevant. Input on the CWAS from prospective contractors could be included in the conditions of tender issued for the Project.

10.2.4 Construction Environmental Management Plan (CEMP)

The construction stage would generate impacts such as dust and noise emissions. The development of a CEMP would assist manage these impacts.

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Annexure 1: Author declaration

Aigis Group firm profile

Aigis Group is a small consultancy firm based in Lake Macquarie, New South Wales (NSW). The firm was established in 2004, although the founding partners (Scott Holmes and Mark Sargent) had worked collaboratively on projects since 2002, including social, economic and market research engagements. The firm was established on the basis of its ability to engage the skills of a group of consultants to augment the firm's internal skills as required, and maintains capacity to operate on that basis, as required.

The firm provides a range of research services, including the provision of economic and socioeconomic impact assessments to organisations in the public sector, property development, licensing, mining, and other industries. A summary list of relevant engagements can be provided on request.

Author profile

Dr Mark Sargent (MMktg[30], MBA[Merit], PhD[31]) has been the firm's Principal Consultant since 2006, and is the author of this document. Mark's doctoral degree was in politics and specifically, regulatory policy. He has taught public policy at the University of Newcastle, and management at the TAFE Hunter Institute. He has also held a variety of past directorship roles. Mark is a past graduate of the Australian Institute of Company Directors (AICD), and an Affiliate Member (Allied Professional), of the Planning Institute of Australia (PIA).

Author declaration

The author warrants that:

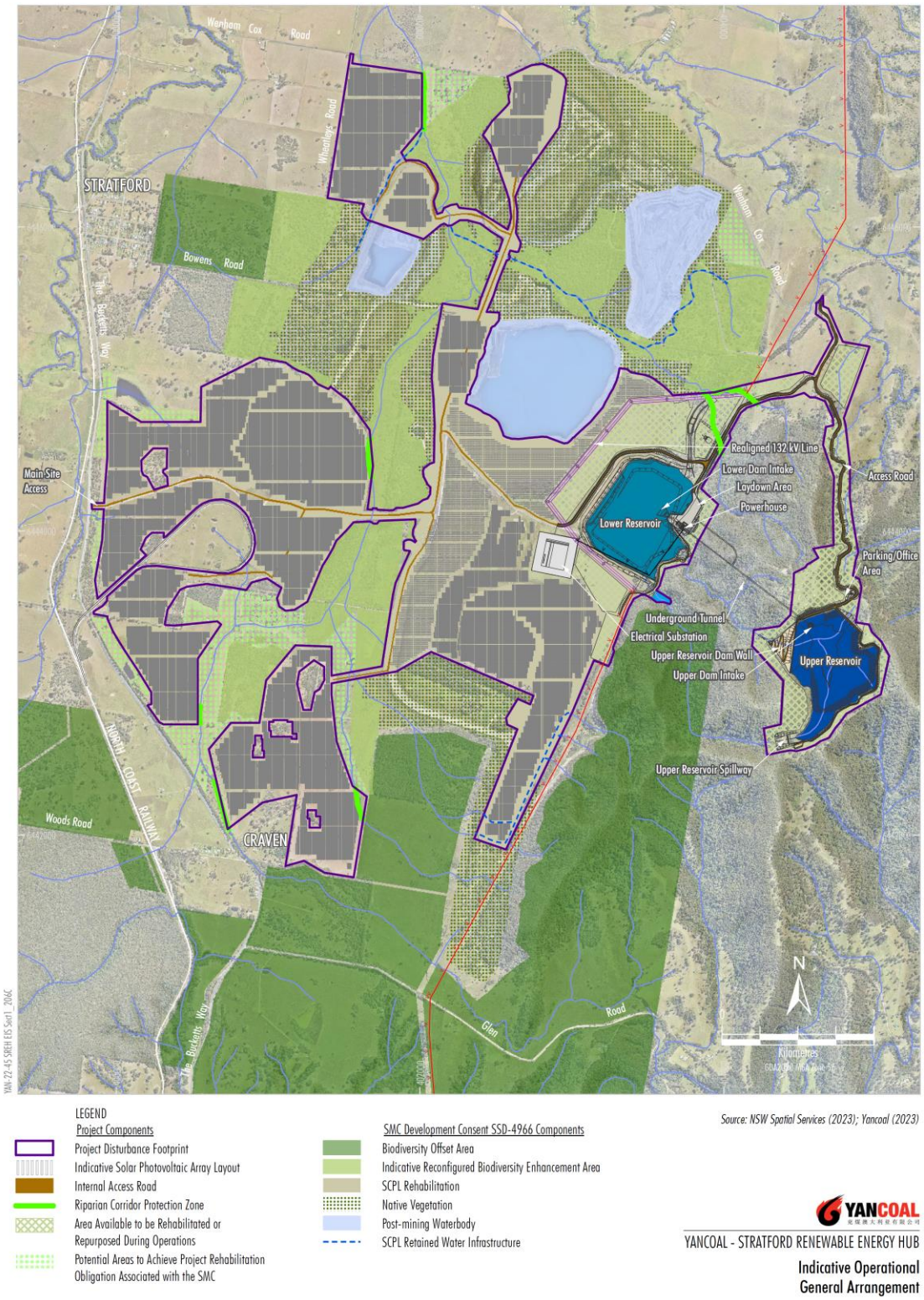
1. The Social Impact Assessment (SIA) contains all information relevant to the SIA for the Project, which was known to the author at the time of preparation.
2. That none of the information in the SIA is false or misleading.

The author also requires that the reviewer/reader refers to the disclaimer forming part of the SIA (page 2).

Mark Sargent
17 July 2024

[30] Market Research major stream.
[31] Doctor of Philosophy in Politics (Public Policy).

Annexure 2: Stratford Renewable Energy Hub (SREH) Indicative Operational General Arrangement



Annexure 3: DPHI Guidelines and principles compliance matrices

Table A3.1: Guidelines compliance questions matrix	
General	**Location in Social Impact Assessment (SIA)**
1 Does the lead author meet the qualification and experience requirements?	Annexure 1
2 Has the lead author provided a signed declaration?	Annexure 1
3 Would a reasonable person judge the SIA report to be impartial, transparent and suitably rigorous given the nature of the project?	Entire SIA
Project's social locality and social baseline	**Location in SIA**
4 Does the SIA report identify and describe all the different social groups that may be affected by the project?	Sections 3; 5; 7; Annexure 7
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?	Sections 1.2; 3; 7; Annexures 2; 8; 10; 11.
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?	Sections 1.2; 3; 4; 5; 7; 8; Annexures 6; 7.
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?	Section 5; Annexure 7.
8 Does the social baseline study demonstrate social-science research methods and explain any significant methodological or data limitations?	Section 5; 6; 7; 8; Annexure 7.

Identification and description of social impacts	**Location in SIA**
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?	Section 5; 6; 7; 8; Annexures 7; 10
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?	While the precautionary principle has been considered, scientific uncertainties have been minimised to the greatest extent possible, and therefore the precautionary principle is not considered to have been triggered.
11 Does the SIA report describe how the preliminary analysis influenced project design and EIS engagement strategy?	Sections 7.3; 7.4; 10.1.1; Annexure 6.
Community Engagement	**Location in SIA**
12 Were the extent and nature of engagement activities appropriate and sufficient to canvass all relevant views, including those of vulnerable or marginalised groups?	Section 3; Annexure 9; 10
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?	Sections 3; 7.3; 7.4; 8; 9; 10.1.1; Annexure 6.
Predicting and analysing social impacts	**Location in SIA**
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?	Section 3; 7.3; 7.4; 8; 9; 10.1.1; Annexures 6; 9; 10.
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?	Sections 3; 6; 7; 8; 9; 10; Annexures 7; 10.
16 Does the SIA report identify its assumptions, and include sensitivity analysis and alternative scenarios? (including 'worst-case' and 'no project' scenarios where relevant)	Section 1; Annexures 5; 6.

Evaluating significance	Location in SIA
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?	Sections 3; 6; 7; 8. Annexures 6; 10.
18 Are the evaluations of significance disaggregated to consider the likely different experiences for different people or groups, especially vulnerable groups?	Sections 3; 6; 7; 8. Annexures 6; 10.
Responses, monitoring and management	**Location in SIA**
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?	Section 6; 7; 8; 9; 10
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?	Sections 7.4.2; 8.1.1; 9.2.3; 10.2.4.
21 Does the SIA report demonstrate how the proponent will adaptively manage social impacts and respond to unanticipated events, breaches, grievances and non-compliance?	Sections 3; 7.3; 7.4; 8; 9; 10.1.1; Annexure 6.

Table A3.2: SIA principles matrix	
Principle	**Location in SIA**
Action-oriented	Section 9; 10.
Adaptive	Sections 3; 7; 8; 9; 10; Annexure 6.
Culturally responsive	Sections 3; 7; 8; 9; 10; Annexures 5; 6.
Distributive equity	Sections 3; 4; 5; 6; 7; 8; 9 10; Annexures 5; 6; 7.
Impartial	Throughout
Inclusive	Sections 3; 5; 7; Annexures 6; 7; 10
Integrated	Throughout
Life-cycle focus	Sections 3; 6; 7; 8; 9; 10; Annexures 5; 6
Material	Section 3; Section 5; Section 6
Precautionary	While the precautionary principle has been considered, scientific uncertainties have been minimised to the greatest extent possible, and therefore the precautionary principle is not considered to have been triggered.
Proportionate	Throughout
Rigorous	Throughout
Transparent	Throughout

Annexure 4: DPHI SIA guidelines relevant example projects

A4.1 Solar farm

Project summary	Impact categories likely to require assessment	Notes, examples and questions to consider
Solar farm		
Large-scale solar farm with battery storage, transmission infrastructure and substation, 5km from town	Community	• How might the project affect the values/character that people associate with their community?
	Surroundings	• Will the project materially change how people experience the landscape and nature values through perceived industrialisation?
	Livelihoods	• Will the project affect people's ability to sustain themselves through employment or business opportunities? • Will the economic benefits and impacts be equally distributed, e.g. between local and regional communities? • Will Aboriginal people have the ability to gain sustenance (spiritual or otherwise) from the land?
	Decision-making systems	• Can affected people make informed decisions or feel they can influence project decisions, including elements of project design?
Modification to solar farm to install battery storage and alter road access	No common material social impacts likely, unless anyone is disadvantaged by changes to road access.	

A4.2 Water infrastructure: raising height of dam

Water Infrastructure		
Raising of dam height	Way of life	• Will there be material changes to people's daily lives and how they get around, particularly during construction? • Will there be impacts such as access to affordable housing if construction induces a large influx of workers? • Is anyone vulnerable to relocation and resettlement?
	Community	• Will there be substantial changes to people's sense of place? • How will community cohesion be impacted during planning, construction and operation? • Will community composition and character change during construction as a result of the nature of the workforce?
	Accessibility	• What are the impacts on roads and how people use them (including pedestrians and public transport)? • Is there capacity in local services (e.g. health, education, community services, and local businesses) to respond to demand from the construction workforce? • Will construction and/or operation affect people's access to the things they need and value?
	Culture	• Will the project affect people's values and beliefs associated with the locality, including how they value landforms, waterways and the built environment? • Could the project cause intangible harm through cultural or spiritual loss (loss or diminution of traditional attachment to the land or connection to Country and associated cultural obligations to care for Country, or loss of rights to gain spiritual sustenance from the land including using water for cultural practices)?

	Health and wellbeing	• Will there be any psychological loss associated with changes to surroundings?
	Surroundings	• Could there be improved access to water for everyday needs? • Will there be changes to environmental values, visual landscape or aesthetic values? • How will nearby residents experience changes in their surroundings during construction? • Will there be changes to public space (including public open space, public facilities and streets)?
	Livelihoods	• Will the project affect people's ability to sustain themselves through employment or business opportunities? • Will the economic benefits and impacts be equally distributed, e.g. between local and regional communities? • Will Aboriginal people have the ability to gain sustenance (spiritual or otherwise) from the land?
	Decision-making systems	• Can affected people make informed decisions and feel they can influence project decisions, including elements of project design? • Are there adequate and responsive grievance and remedy mechanisms in the event of complaints?

Annexure 5: Impact scoping process materials

Yancoal Stratford Renewable Energy Hub preliminary risk identification

Table A5.1: Risk identification based on social impact and stakeholder distribution

Assessment matter	Social impacts/risks potentially indicated (?)	Preliminary comments on potential impacts	Mitigation and risk management
Biodiversity/ecology	Livelihoods; surroundings; culture	Required clearing and upper reservoir construction is an identified issue to some elements in the community, dependent on Biodiversity Development Assessment Report (BDAR) study findings.	Engagement with relevant local and regional parties may be required. BDAR will include guidance on any offset requirements to mitigate clearing.
Aboriginal and/or historic heritage	Community; culture; surroundings	Likelihood and magnitude of risk would be dependent on engagement with Registered Aboriginal Parties (RAPs)/Local Aboriginal Land Councils (LALCs) and findings of Aboriginal Cultural Heritage Assessment (ACHA). BDAR investigations may also be relevant.	Yancoal Australia Ltd (Yancoal) has established relationships with the relevant local parties, and has worked collaboratively with those parties on the preservation of heritage material. This approach can also be applied to investigations for the land associated with the Project.
Water resources	Surroundings; livelihoods	Potential for surface water effects on river catchments (mainly Karuah River). Assumed as being most likely for site disturbance during construction.	Construction Environmental Management Plan (CEMP) to include approaches for capture and repurposing of any run off (e.g. stormwater, dust suppression). Long term surface water management infrastructure for disturbed areas, particularly on gradients for pipelines.
Land	Surroundings; way of life; health and wellbeing.	All aspects of the Project represent changes in land use, which may result in different impacts (positive or negative)	Yancoal is engaging with neighbouring landholders in relation the Project generally. With regard to privately owned land, no encroachment would occur.
Transport and access	Access; way of life	Construction stage is likely to generate traffic, operational stage should involve substantially less.	It is assumed that the Road Transport Assessment will include recommendations for traffic management, particularly in the construction stage. May also be included in Project CEMP
Landscape and visual	Surroundings	Permanent change to views, most relevant to local land occupants or frequent visitors to the area.	Placement of the solar farm within natural or post-mining site depressions to reduce visibility. Retention of vegetation where possible to reduce visibility of elevated elements of the hydro infrastructure.

Assessment matter	Social impacts/risks potentially indicated (?)	Preliminary comments on potential impacts	Mitigation and risk management
Glint and glare	Surroundings	Possible changes to views most relevant to local land occupants or frequent visitors to the area.	Placement of the solar farm within natural or post-mining site depressions to reduce visibility. Placement and orientation of arrays to mitigate effects.
Noise	Surroundings; health and wellbeing; way of life	Likely to relate only to limited local land occupants	Regular monitoring and compliance with noise management obligations.
Air quality	Health and wellbeing	Presumed as mainly relevant to construction stage.	CEMP to include dust suppression approaches as required.
Hazards	Health and wellbeing; surroundings;	Potential effects differ for construction stage (e.g. explosives as required) and operational stage (e.g. electromagnetic fields etc. as per Secretary's Environmental Assessment Requirements [SEARs]). Some potential effects may also be common across stages (e.g. bushfire risk).	Design and construction standards. Strict compliance with obligations in relation to each risk. Appropriate Operational Environmental Management Plan, including ongoing monitoring and maintenance regimes.
Social	Way of life; community; culture; health and wellbeing; livelihoods	The local community has benefited from Yancoal's contributions during the life of the two mines and may have expectations of further support relating to this project.	Yancoal is engaging with relevant local organisations regarding the transition to mine closure. The Project and the prospects for further support can be addressed as part of that process.
Economic	Livelihoods; way of life; community	Short term construction employment, longer term operations employment and potential commercial engagements with local businesses are potentially positive outcomes. Competition for some services (e.g. accommodation) may affect other sectors (e.g. tourism).	Consideration of appropriate benefit sharing mechanisms as indicated in SEARs. Ongoing engagement with community in terms of staging and potential for effects during each stage of the Project.
Waste	Surroundings	Identified potential impacts relating to post use management of PV panels.	CEMP and Operational Environmental Management Plan to address waste management.

Social impact assessment and distribution matrix – SEARs requirements

Table A5.2: Assessment of social impact distribution, SEARs requirements

Assessment matter	SEARs description – matters with social impact implications	Social impacts potentially indicated ?	Local effect	Regional effect	State-wide effect
Biodiversity	*- an assessment of the biodiversity impacts of the project on terrestrial, aquatic riparian and groundwater-dependent ecosystems (including listed threatened species and communities) and impacts to National Parks and Reserves, including an assessment of the biodiversity values and the likely biodiversity impacts of the project, in accordance the* Biodiversity Conservation Act 2016 *(BC Act), the Biodiversity Assessment Method 2020 and documented in a Biodiversity Development Assessment Report (BDAR);* *- the BDAR must:* *o be prepared using the approved BDAR template, o document the application of the avoid, minimise and offset framework including assessing all direct, indirect and prescribed impacts in accordance with the BAM;* *o assess the impacts associated with all ancillary infrastructure, including the transport route road upgrades;* *o include an assessment for SAII in accordance with Section 9.1 of the BAM;* *- an assessment of the likely impacts on listed aquatic threatened species, populations or ecological communities, scheduled under the Fisheries Management Act 1994, and a description of the measures to minimise and rehabilitate impacts, including impacts to the Hunter River, Sandy Creek, and Muscle Creek;* *- a cumulative impact assessment of biodiversity values in the region from nearby developments; and* *- if an offset is required, details of any strategy to offset any residual impacts of the development in accordance with the BC Act.*	Culture; surroundings	✓	✓	✓

Assessment matter	SEARs description – matters with social impact implications	Social impacts potentially indicated ?	Local effect	Regional effect	State-wide effect
Heritage	- *assess the impact to Aboriginal cultural heritage items (archaeological and cultural) in accordance with the* Guide to Investigating, Assessing and Reporting on Aboriginal Cultural Heritage in NSW *(OEH, 2011) and the* Code of Practice for the Archaeological Investigation of Aboriginal Objects in NSW *(DECCW, 2010) including results of archaeological test excavations (if required);* - *provide evidence of consultation with Aboriginal communities in determining and assessing impacts, developing options and selecting options and mitigation measures (including the final proposed measures), having regard to the* Aboriginal Cultural Heritage Consultation Requirements for Proponents *(DECCW, 2010); and* - *assess the impact to historic heritage having regard to the NSW Heritage Manual*	Community; culture; surroundings	✓	✓	✘

Assessment matter	SEARs description – matters with social impact implications	Social impacts potentially indicated ?	Local effect	Regional effect	State-wide effect
Water	*- a detailed site water balance for the project, including the water take from each surface and ground water source, any licensing requirements, and determine whether an adequate and secure water supply is available for the development;* *- a detailed description of the proposed water management system, water monitoring program, erosion and sediment control measures, and other measures to mitigate surface water and groundwater impacts;* *- an assessment of the impacts of the project on:* *o the water catchment and quantity and quality of the region's surface and ground water;* *o water security for local downstream receivers including other dependent water industries;* *o hydrological flows on site, including any potential flooding impacts;* *o key water features on site, including potential impacts on riparian land;* *o type and extent of any dredging or reclamation activities within 'water land';* *o water-related infrastructure, basic landholder rights and the entitlements of water users;* *- a description of the likely changes to the hydrological regime of the area and any associated biodiversity impacts;* *- where the project involves works within 40 metres of the high bank of any river, lake or wetlands (collectively waterfront land), identify likely impacts to the waterfront land, and how the activities are to be designed and implemented in accordance with the* DPI Guidelines for Controlled Activities on Waterfront Land *(2018) and (if necessary)* Why Do Fish Need to Cross the Road? Fish Passage Requirements for Waterway Crossings *(DPI 2003); and* Policy & Guidelines for Fish Habitat Conservation & Management *(DPI, 2013); and* *- a strategy to manage spoil and enhance any new landforms created.*	Way of life; health and wellbeing; surroundings; livelihoods	✓	✓	✗

Assessment matter	SEARs description – matters with social impact implications	Social impacts potentially indicated ?	Local effect	Regional effect	State-wide effect
Land	*- a detailed justification of the suitability of the site and that the site can accommodate the proposed development having regard to its potential environmental impacts, permissibility, strategic context and existing site constraints, having regard to the Solar Guideline;* *- an assessment of impacts of the project on:* *o the impact of the development on The Glen Nature Reserve in accordance with the* National Parks and Wildlife Act 1974 *and the guidelines for* Development adjacent to National Parks and Wildlife Services Lands *(DPIE,2020);* *o the impact on any existing Biodiversity Offset Areas, Enhancement Areas and Rehabilitation Areas;* *o soils including potential impacts associated with the spoil generated by the project, the use of hydrocarbons and chemicals and a soil survey to determine the soil characteristics and consider the potential for erosion to occur;* *o the topography of the site, including the creation of any new landforms;* *o the geotechnical stability of the site and stability of voids that may be used for spoil emplacement or water storage;* *o consideration of Crown lands, flood prone land, irrigated lands, travelling stock routes, public recreation, mining, quarries mineral or petroleum rights;* *o an assessment of the agricultural impacts in accordance with the Solar Guideline for agricultural land being used;* *o completion of a Land Use Conflict Risk Assessment in accordance with the Department of Industry's* Land Use Conflict Risk Assessment Guide*;* *o consideration of existing approvals, licences, titles, tenures and rehabilitation requirements for the site, including those specified under SSD-4966 (as modified) and the associated Mining Operations Plan and Rehabilitation Management Plan; and* *- a strategy to manage the progressive rehabilitation of the land disturbed by the project, enhance any new landforms created and describe the revised rehabilitation objectives and rehabilitation completion criteria to be achieved in relation to any retained infrastructure and / or disturbance areas to be utilised by the project.*	Surroundings; way of life; livelihoods	✓	✓	✓

Assessment matter	SEARs description – matters with social impact implications	Social impacts potentially indicated ?	Local effect	Regional effect	State-wide effect
Transport and access	*- an assessment of the peak and average traffic generation, including over-dimensional vehicles / heavy vehicles requiring escort and construction worker transportation;* *- an assessment of the likely transport impacts to the site access route(s) including for over-dimension vehicles, site access point(s), any Crown land, particularly in relation to the capacity and condition of the roads, road safety and intersection performance;* *- a cumulative impact assessment of traffic from nearby developments;* *- provide details of measures to mitigate and / or manage potential impacts including a schedule of all required road upgrades (including resulting from heavy vehicle and over mass / over dimensional traffic haulage routes), road maintenance contributions, and any other traffic control measures, developed in consultation with the relevant road authority; …*	Access; way of life	✓	✗	✗

Assessment matter	SEARs description – matters with social impact implications	Social impacts potentially indicated ?	Local effect	Regional effect	State-wide effect
Landscape and visual	*Landscape and Visual – including:* *- a landscape and visual impact assessment, for the whole project and prepared in accordance with the Solar Guideline and the* Technical Supplement – Landscape and Visual Impact Assessment *for the solar components;* *- a detailed assessment of the likely visual impacts (including night lighting) of all components of the project on surrounding residences (including approved developments, lodged development applications and dwelling entitlements), and key locations, scenic or significant vistas and road corridors in the public domain including National Parks and Reserves and vantage points; and* *- details of measures to mitigate and/or manage potential impacts (including a draft landscaping plan for on-site perimeter planting, with evidence it has been developed in consultation with affected landowners);*	Surroundings	✓	✗	✗
Glint and glare	*provide a glint and glare assessment prepared in accordance with the Solar Guideline.*	Surroundings	✓	✗	✗
Noise	*– including an assessment of the construction noise impacts of the development in accordance with the* Interim Construction Noise Guideline *(ICNG), operational noise impacts in accordance with the* NSW Noise Policy for Industry *(2017), blasting impacts cumulative noise impacts (considering other developments in the area), and a draft noise management plan if the assessment shows construction noise is likely to exceed applicable criteria.*	Surroundings; health and wellbeing; way of life	✓	✗	✗
Air	*- an assessment of the particulate matter and greenhouse gas emissions of the project; and* *- an assessment of the likely greenhouse gas impacts of the project including a breakdown of scope 1, 2 and 3 emissions as defined by the Greenhouse Gas Protocol and measures to minimise emissions and consideration of climate change adaptation related to the project.*	Way of life; health and wellbeing; surroundings	✓	✗	✗

Assessment matter	SEARs description – matters with social impact implications	Social impacts potentially indicated ?	Local effect	Regional effect	State-wide effect
Hazards	- *an assessment of:* *o any potentially hazardous impacts of the project; and* *o any public safety risks, including bushfire and flooding risks (including potential impacts on National Parks and Reserves, State Forests and Conservation Areas and downstream landholdings) and consideration of Dam Safety Committee Guidance;* - *where there are dangerous goods and hazardous materials associated with the development provide a preliminary risk screening in accordance with* State Environmental Planning Policy (Resilience and Hazards)*; and* - *where required by the State Environmental Planning Policy (Resilience and Hazards), provide a Preliminary Hazard Analysis (PHA) prepared in accordance with* Hazardous Industry Planning Advisory Paper No.6 – Guidelines for Hazard Analysis *(DoP[32], 2011) and* Multi-Level Risk Assessment *(DoP, 2011).* - *an assessment of potential hazards and risks including but not limited to fires, spontaneous ignition, electromagnetic fields or the proposed grid connection infrastructure against the International Commission on Non-Ionizing Radiation Protection (ICNIRP)* Guidelines for limiting exposure to Time-varying Electric, Magnetic and Electromagnetic Fields*;* - *identify potential hazards and risks associated with bushfires / use of bushfire prone land including the risks that a solar farm would cause bush fire and demonstrate compliance with* Planning for Bush Fire Protection 2019*.*	Health and wellbeing; way of life; surroundings	✓	✓	✗

[32] Department of Planning (former)

Assessment matter	SEARs description – matters with social impact implications	Social impacts potentially indicated ?	Local effect	Regional effect	State-wide effect
Social	- *an assessment of the social impacts of the project in accordance with* Social Impact Assessment Guideline *(DPIE, 2021), including impacts on:* *o the locality;* *o the demand for infrastructure and services in the Mid Coast local government area, including consideration of construction workforce accommodation; and* *o users of nearby National Parks and Reserves (including The Glen Nature Reserve), Conservation Areas.*	Way of life; community; culture; health and wellbeing	✓	✓	✓
Economic	- *an assessment of the economic impacts or benefits of the project for the region and the State as a whole and provide details of any proposed voluntary benefit-sharing programs in accordance with the Solar Guideline.*	Livelihoods; way of life	✓	✓	✓
Waste	- *an assessment must identify, quantify and classify the likely waste streams to be generated during construction and operation, and describe the measures to be implemented to manage, reuse, recycle and safely dispose of this waste, taking into consideration capacity and availability of local landfills.*	N/A	✓	✓	✘

Annexure 6: Social risk assessment matrices – SREH

DPHI Social Impact Assessment (SIA) scoping and assessment framework

Table 3 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 4 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 5 Defining magnitude levels for social impacts

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% 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, for a reasonably short time, for a small number of people who are generally adaptable and not vulnerable.
Minimal	Little noticeable change experienced by people in the locality.

Table 6 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	Medium	Medium	High	High
D	Unlikely	Low	Low	Medium	Medium	High
E	Very unlikely	Low	Low	Low	Medium	Medium

Stratford Renewable Energy Hub (SREH) summary social risk assessment – SIA baseline assessment and SIA monitoring, management and mitigation strategies

Table A6.1: Social impact rating summary

Description of social impact	Affected social impact categories	Summary of matters considered	Avoidance, management and mitigation measures references
Support for renewable energy projects in the Gloucester Valley/SREH	Surroundings; culture	General support for pumped hydro energy storage (PHES); potential co-use (solar farm and agricultural use).	SIA Sections 9.2.1; 10.2.1; 10.2.2
Construction stage workforce (demand increase in trade for local businesses and service providers)	Way of life; accessibility; health and wellbeing; livelihoods.	Temporary increases for most businesses likely to be positive. Demand on some services (e.g. medical) may impact community access.	SIA Sections 9.2.1; 9.2.3; 10.2.1; 10.2.2; 10.2.4
Operations stage workforce (permanent economic and social activity and periodic additional economic activity)	Community; accessibility; livelihoods	Expected to be positive.	SIA Sections 9.2.1; 10.2.1
Impacts of Yancoal Australia Limited's (Yancoal's) investment in the region	Way of life; community; livelihoods	Generally considered as likely to be positive.	SIA Sections 9.2.1; 10.2.1; 10.2.2; 10.2.8; 10.2.9
Yancoal/Stratford Coal Pty Ltd (SPCL) should maintain communication with the community in relation to the project	Decision-making systems	Comprehensive engagement program undertaken and ongoing. SIA includes recommendations for ongoing engagement.	SIA Sections 9.2.1; 10.2.1; 10.2.2
Beneficial reuse of the Stratford Mining Complex (SMC) site	Community; surroundings	Generally expected to be positive; Various other possible uses identified.	SIA Sections 9.2.1; 10.2.1; 10.2.2; 10.2.3; 10.2.8; 10.2.9
Contribution to NSW/NEM supply and system stability	Accessibility	Positive	SIA Section 4; Annexure 8
Contribution to meeting NSW Government emissions reduction targets	Accessibility	Positive	SIA Section 4
Many Australians support collective action to mitigate the effects of climate change	Health and wellbeing; surroundings; decision-making systems	Positive	SIA Section 3.10

Description of social impact	Affected social impact categories	Summary of matters considered	Avoidance, management and mitigation measures references
Construction stage workforce (temporary regular high occupancy levels and income for accommodation providers)	Livelihoods	Positive	SIA Section 3.8 (Table 9); SIA Section 6.3 (Table 21)
Construction stage workforce (potential temporary increase in demand for and pressure on housing)	Accessibility; livelihoods	May negatively other housing market participants; Proposed Construction Workforce Accommodation Strategy (CWAS) to address mitigation.	SIA Sections 9.2.3; 10.2.2; 10.2.4
Construction stage workforce may temporarily increase demand for services (e.g., medical), which may impact community access	Community; accessibility	May negatively impact on some services that already constrained. Onsite first aid provided. Proposed Construction Workforce Accommodation Strategy (CWAS) to contribute to mitigation.	SIA
Construction stage workforce (temporarily increased pressure on accommodation detracting from tourist activity)	Accessibility; livelihoods	May 'crowd out' tourists; Offers consistently high occupancy rates for accommodation providers. Proposed Construction Workforce Accommodation Strategy (CWAS) to address mitigation.	SIA Sections 9.2.3; 10.2.2; 10.2.4
Construction stage workforce (temporary change in demographic structure of the population)	Way of life; community; health and wellbeing; surroundings.	Concerns over mismatch between resident and non-resident demographics etc.; Workforce likely to be drive-in drive-out (DIDO) on roster basis; Anecdotal evidence is that previous project effects have not created major issues.	SIA Sections 9.2.1; 9.2.3; 10.2.1; 10.2.2; 10.2.4; 10.2.5
Concerns with engagement process	Decision-making systems	Issues with scale and duration of engagement; Comprehensive engagement program undertaken and ongoing.	SIA Sections 9.2.1; 9.2.3; Section 10.2 (all)
Solar farm (visual impacts)	Community; culture; health and wellbeing; surroundings.	Existing community opposition; changes already made to proposed arrays. Additional vegetative screening to be established. Impacts assessed in VIA as 'low' or 'very low' at all private residences. Impacts assessed as 'low' or 'very low' from Bucketts Way with additional planned screening.	SIA Sections 9.2.1; 10.2.1; 10.2.2; 10.2.3; VIA recommendations

Description of social impact	Affected social impact categories	Summary of matters considered	Avoidance, management and mitigation measures references
Solar farm (maintenance requirements)	Accessibility; surroundings; livelihoods	Water use for cleaning PV panels.Weed and vegetation management; lack of agri-solar use. On-site water reuse; use of local labour for maintenance.	SIA Sections 9.2.2; 10.2.3; 10.2.8
Solar farm waste management (e.g., PV panel materials/componentry refuse)	Surroundings.	Photovoltaic (PV) panel waste detracts from renewable energy effectiveness; Recycling/beneficial reuse of panel waste.	SIA Sections 10.2.2; Section 10.2.3; WMS recommendations
Concerns for impacts on biodiversity (particularly construction of the upper reservoir and subsequent inundation)	Community; culture; health and wellbeing; surroundings.	Construction would create habitat and flora loss; impact on extant aquatic species in lower reservoir. Biodiversity offset strategy; Maintain established engagement with NPWS.	SIA Sections 9.2.2; 10.2.2; 10.2.5; 10.2.6
Concerns for Aboriginal cultural heritage impacts and related community impacts	Community; culture; health and wellbeing	Potential heritage effects; associated possible psychological effects on First Nations people; Engagement with relevant parties to identify and preserve any cultural heritage items.	SIA Sections 9.2.1; 9.2.2; 9.2.3; 10.2.1; 10.2.6; 10.2.7; 10.2.9; ACHAR recommendations
Potential overspill of upper reservoir/flooding	Surroundings	Potential for effects including flooding and erosion; Dam design includes adequate freeboard to minimise risk.	SIA Sections 9.2.2; 10.2.2; 10.2.6
Construction stage traffic (The Bucketts Way)	Way of life; accessibility	Additional traffic; road safety; road degradation.	SIA Sections 5.2; 9.2.2; 10.2.1; 10.2.2; 10.2.5
Solar farm (exclusion of alternative land uses)	Surroundings; livelihoods; decision-making systems.	Other uses excluded (e.g. agriculture); potential co-use (e.g. 'agri-solar'). Solar farm would contribute to broadly distributed benefit, use by a single occupant would concentrate benefit with that occupant.	SIA Sections 10.2.1; 10.2.2; 10.2.3; 10.2.8

Table A6.2: Summary social impact risk assessment - SREH				
Project activity	**Baseline assessment**	**With project, pre-AMM**	**Post AMM effect rating/ positive or negative**	
Support for renewable energy projects in the Gloucester Valley	**C2**	**A3**	**A3**	
Construction stage workforce (temporary demand increase in trade for local businesses and service providers)	**D1**	**A3**	**A3**	
Operations stage workforce (permanent economic and social activity and periodic additional economic activity)	**D1**	**A3**	**A3**	
Impacts of Yancoal's investment in the region	**C2**	**B3**	**B3**	
Yancoal/SPCL should maintain communication with the community in relation to the Project	**A1**	**A2**	**A2**	
Beneficial reuse of the SMC site	**C3**	**A3**	**A3**	
Contribution to NSW/NEM supply and system stability	**E1**	**A2**	**A2**	
Contribution to meeting NSW Government emissions reduction targets	**E1**	**A2**	**A2**	
General support for collective action to mitigate effects of climate change (CSIRO etc.)	**A2**	**A2**	**A2**	
Construction stage workforce (temporary regular high occupancy levels and income for accommodation providers)	**C2**	**B2**	**B2**	
Construction stage workforce demographic effects (few reported negative impacts for past projects)	**D1**	**A1**	**C1**	
Engagement with GWFPAC, RAPs etc. to identify and preserve cultural heritage items	**C2**	**C3**	**B3**	
Solar farm land use will create broad distribution of benefit rather than benefit accruing to one land occupant	**E1**	**A2**	**A2**	
Recycling and beneficial reuse of solar farm waste (e.g., PV panel materials/componentry refuse)	**E1**	**A3**	**A2**	
Construction stage workforce (potential temporary increase in demand for and pressure on housing)	**C2**	**A3**	**A2**	
Construction stage workforce may temporarily increase demand for services (e.g., medical), which may impact community access.	**C2**	**B3**	**C3**	
Construction stage workforce (temporarily increased pressure on accommodation detracting from tourist activity)	**C1**	**A3**	**C3**	
Construction stage workforce (temporary change in demographic structure of the population)	**C1**	**B2**	**B2**	
Concerns with engagement process	**D1**	**A2**	**C2**	
			Positive effect	
			Negative effect	

Project activity	Baseline assessment	With project, pre-AMM	Post AMM effect rating/ positive or negative	
Solar farm (visual impacts). Impacts assessed in VIA as 'low' or 'very low' at all private residences. Impacts assessed as 'low' or 'very low' from Bucketts Way with planned additional screening.	E1	A3	A2	
Solar farm (maintenance water usage, site management (weeds etc.) and lack of agri-solar use)	E1	A3	A2	
Solar farm (waste management)	E1	A3	A2	
Concerns for impacts on biodiversity (particularly construction of the upper reservoir and inundation)	E1	A3	A2	
Concerns for Aboriginal cultural heritage impacts and related community impacts	C2	C3	C2	
Potential overspill of upper reservoir/flooding	E1	C3	C2	
Construction stage traffic (The Bucketts Way)	C1	A3	A2	
Solar farm (exclusion of alternative land uses, particularly agricultural use)	D1	C3	C2	
			Positive effect	
			Negative effect	

Annexure 7: Community profiles

Figure A7.1: Gloucester Statistical Area 2 (SA2)

Figure A7.2: MidCoast Council (MCC) Local Government Area (LGA)

Figure A7.3: Mid North Coast Statistical Area 4 (SA4)

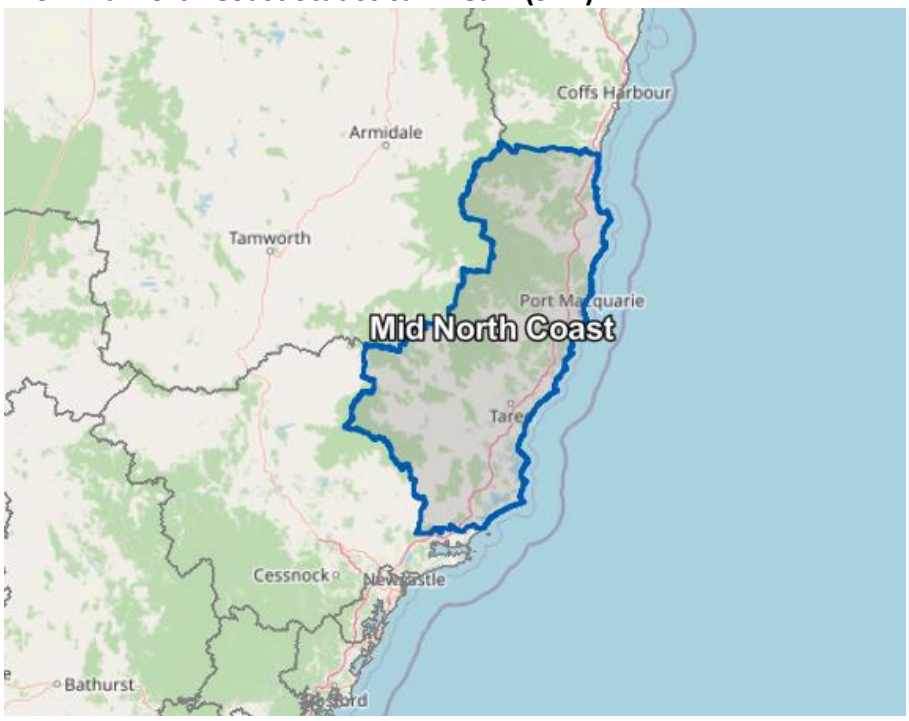
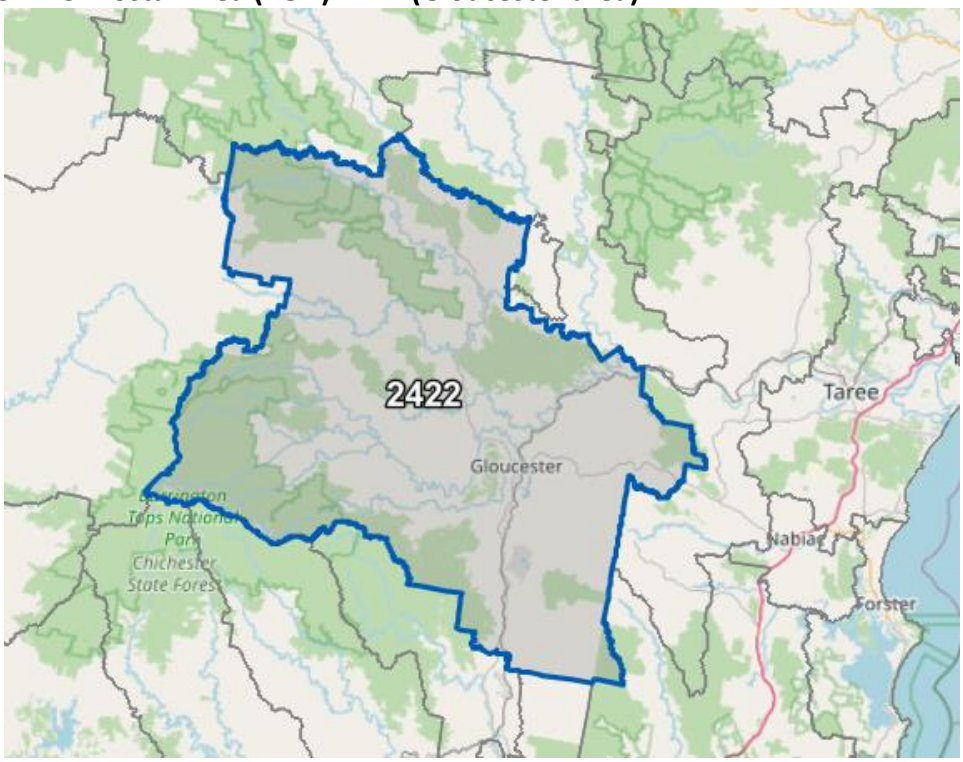


Figure A7.4: New South Wales (State)

Figure A7.5: Postal Area (POA) 2422 (Gloucester area)



A7.1 Personal and population characteristics

Table A7.1: Personal and population characteristics (ABS, 2024)

	SA2 (%[33])	LGA (%)	SA4 (%)	New South Wales (NSW) (%)
Population	**5,310**	**96,579**	**229,035**	**8,072,163**
Male	49.6	48.8	48.6	49.4
Female	50.4	51.2	51.4	50.6
Median Age	**55 years**	**54 years**	**50 years**	**39 years**
< 15 years	13.9	14.5	15.7	18.2
15-29 years	11.5	12.2	13.7	18.7
30- 44 years	12.2	12.7	13.8	21.0
45-64 years	29.1	27.3	26.9	24.5
≥ 65 years	33.3	33.3	29.9	17.6
Ancestry (top responses)[34]				
Australian	44.7	42.4	42.0	28.6
Australian Aboriginal	6.6	6.7	6.9	3.2
English	44.4	43.9	43.9	29.8
Irish	9.9	11.0	11.7	9.1
Scottish	12.7	10.8	10.7	7.7
Born in Australia	84.4	82.2	82.6	65.4
Aboriginal/Torres Strait Islander	7.3	7.3	7.5	3.4
Parents' country of birth				
Both parents born overseas	10.1	12.3	12.7	39.4
Father only born overseas	4.6	5.5	5.7	6.3
Mother only born overseas	3.4	3.5	3.9	4.6
Both parents born in Australia	75.4	70.8	70.3	43.7
Language				
English (only spoken at home)	91.8	89.9	90.0	67.6
Non-English language (spoken at home)	2.9	4.3	4.8	29.5
Legally registered relationship status				
Married	49.2	47.5	46.0	47.3
Separated	4.0	4.1	4.0	3.2
Divorced	11.5	12.3	12.1	8.6
Widowed	9.2	8.4	7.9	5.1
Never married	26.1	27.6	29.9	35.7

A7.2 Family and household characteristics

Table A7.2: Family and household characteristics (ABS, 2024)

	SA2 %	LGA %	SA4 (%)	NSW %
Couple without children	55.5	53.5	50.1	37.9
Couple with child(ren)	28.0	27.9	30.8	44.7
One parent with child(ren)	15.3	17.2	17.7	15.8
Other family	1.2	1.4	1.4	1.6
Family households	67.0	66.4	67.0	71.2
Single/lone person households	30.5	30.8	30.1	25.0
Group households	2.3	2.8	3.0	3.8
Average people/household (count)	2.2	2.2	2.3	2.6

[33] Highlighted data excepted.
[34] Census form included option of reporting two (2) ancestries; therefore, responses do not reconcile with population counts.

A7.3 Income and housing-related data

Table A7.3 Income and housing-related data

	SA2	LGA	SA4	NSW
Income	**$**	**$**	**$**	**$**
Median weekly personal income	564	564	591	813
Median weekly household income	1,069	1,060	1,132	1,829
Median weekly family income	1,362	1,341	1,421	2,185
	%	**%**	**%**	**%**
% households < $650 gross p.w.	27.8	26.4	25.0	16.3
% households > $3000 gross p.w.	8.7	9.3	11.0	26.9
Housing tenure	**%**	**%**	**%**	**%**
Owned outright	53.2	48.1	45.5	31.5
Owned with a mortgage	21.2	23.9	25.4	32.5
Rented	21.2	22.5	24.2	32.6
Dwelling structure	**%**	**%**	**%**	**%**
Occupied private dwellings	84.8	83.7	88.0	90.6
Separate house	93.4	82.3	80.9	65.6
Semi-detached, row or terrace house, townhouse etc.	3.7	8.8	9.6	11.7
Flat or apartment	1.6	7.0	7.8	21.7
Other dwelling	0.9	1.7	1.4	0.7
Housing costs	**$**	**$**	**$**	**$**
Median monthly mortgage repayment	1,300	1,500	1,521	2,167
Median weekly rent	275	315	330	420

Table A7.4: Socioeconomic Indexes for Areas (SEIFA) Indexes – 2021 Census[35]

	Index of Relative Socioeconomic Disadvantage (IRSD)		Index of Relative Socioeconomic Advantage and Disadvantage (IRSAD)		Index of Economic Resources (IER)		Index of Education and Occupation (IEO)	
	Score	**Decile**	**Score**	**Decile**	**Score**	**Decile**	**Score**	**Decile**
Gloucester SA2	943	2	913	2	970	4	912	2
Mid Coast LGA	943	3	912	3	963	4	905	3

[35] Australian Bureau of Statistics (ABS) does not publish the indexes at SA4 level.

A7.4 Population projections

A7.4.1 Total population

NSW Department of Planning and Environment (DPHI) population projections for the SA2 and the LGA are presented in Table A7.5. The data indicate that population change in the Gloucester SA2 is projected as being relatively flat over the period. The LGA population will increase at a significantly higher rate, however this remains lower than the projected population increase of 20.9% for NSW.

Table A7.5: DPHI population projections 2021-2041

	2021	2026	2031	2036	2041	Change (%)
SA2	5,182	5,229	5,279	5,310	5,325	**2.8**
LGA	95,073	98,912	102,660	105,940	108,760	**14.4**
SA4	225,975	234,081	242,040	248,865	254,581	**12.7**
NSW	8,166,757	8,462,770	8,933,640	9,404,886	9,872,934	**20.9**

A7.4.2 Population by age

Figures 3 and 4 display time series for population change by age in the SA2 and LGA, as assessed by DPHI. Changes by age group for the two populations are presented in Table 7 and are graphically represented in Figure 5.

Both figures demonstrate the extent to which the population will age. This is most apparent in the projected increase in the 75 years and older age group in each chart. However, other relevant features are:

- The 60-74 years age group remains the largest for both populations over the entire forecast period, despite declining slightly in proportional terms.
- In both populations, the three oldest age groups are also the largest, numerically, which is clearly consistent with the older population profiles.
- It is noted that for the LGA, DPHI projects the median age to increase from 52.7 years (2022) to 54.7 years (2041). The increases in the 75+ years and 45-59 years age group are apparent contributors to population ageing.
- The younger age groups will actually decline in absolute and proportional terms. This is more apparent for the SA2 population. Further evidence of this decline is contained in the DPHI LGA forecast for natural change (births less deaths) over the 2021-2041 period at -12,434 people.

A7.4.3 Working age population projections

ABS generally defines the population between 15 and 64 years as the working age population. Adopting this assumption, this population cohort is also represented in Figures 3, 4 and 5, and Table A7.6, based on the DPHI population projections. As the diagrams and data illustrate, the working age population will increase in the LGA. However it will decline by around 7% in the SA2. This is interpreted as structural demographic change, related to relatively rapid population ageing. In this context, the effects of mine closure can be interpreted as one contributing factor in an environment of broad structural change.

Figure A7.6

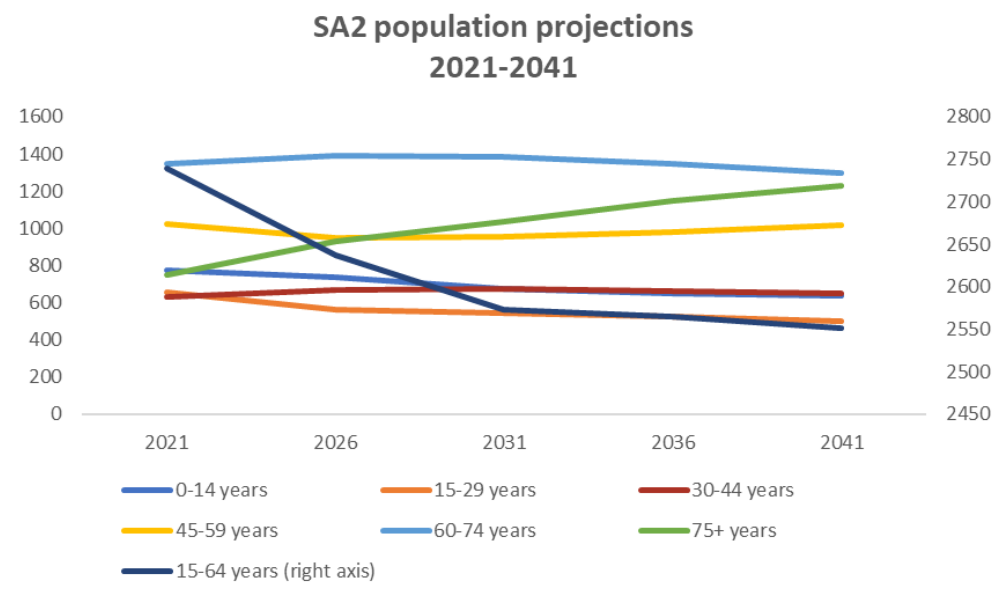


Figure A7.7

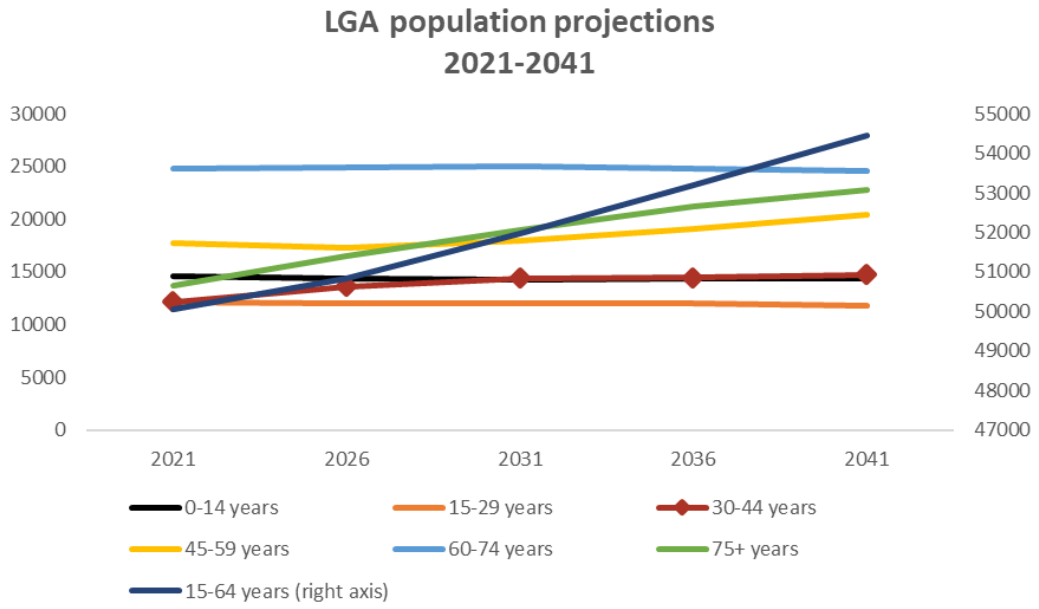


Figure A7.8

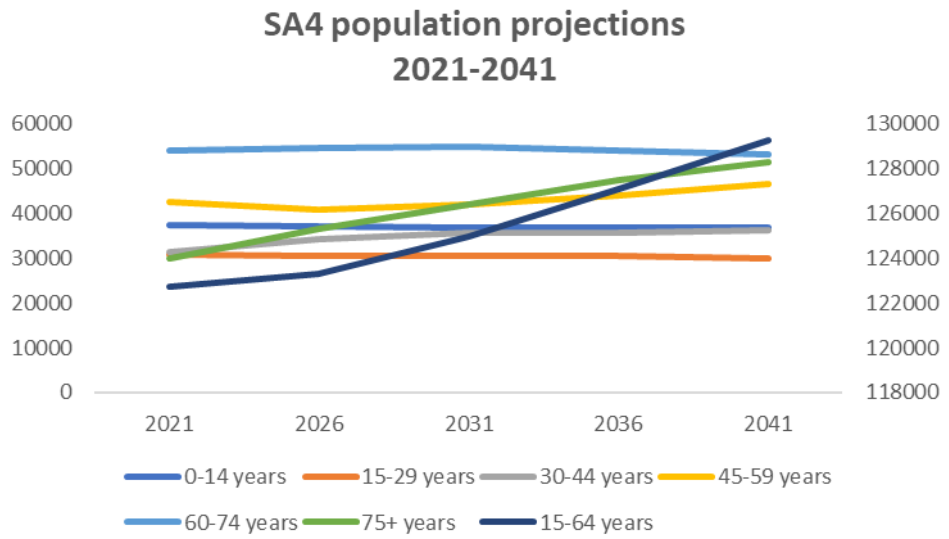
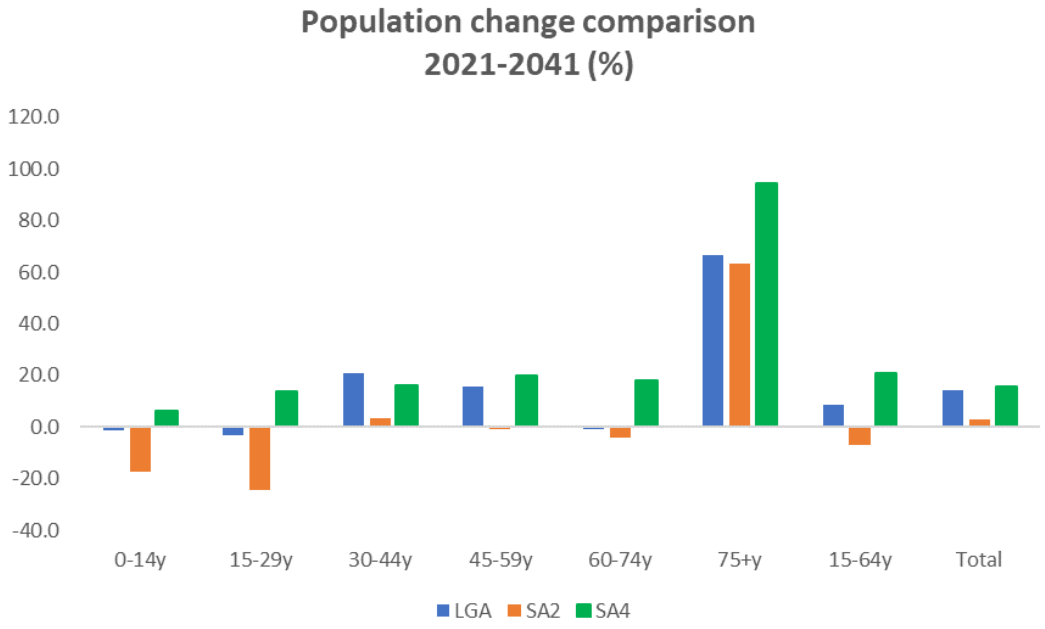


Table A7.6: Projected population change by age group 2021-2041 (DPHI)

Age group	SA2 (%)	LGA (%)	NSW %
0-14 years	-17.4	-1.3	6.1
15-29 years	-24.2	-3.2	13.9
30-44 years	3.7	21.1	16.1
45-59 years	-0.6	15.6	20.1
60-74 years	-4.0	-0.6	17.9
75+ years	63.2	66.4	94.4
Total	2.8	14.4	20.9
15-64 years	-6.8	8.8	15.9

Figure A7.9



A7.4.4 Implied dwelling demand

Table A7.7: DPHI implied dwelling projections 2021-2041

	2021	2026	2031	2036	2041	Change (#)	Change (%)
SA2	2,811	2,932	3,026	3,099	3,145	**334**	**11.9**
LGA	52,998	56,043	59,090	61,760	64,034	**11,036**	**20.8**
SA4	115,100	121,054	127,099	132,364	136,753	**21,653**	**18.8**
NSW	3,425,215	3,601,383	3,844,526	4,092,562	4,329,475	**904,260**	**26.4**

A7.4.5 Households by type

Table A7.8: DPHI household type projections 2021-2041 – total change

	SA2		LGA		SA4		NSW	
Household type	**Count**	**%**	**Count**	**%**	**Count**	**%**	**Count**	**%**
Couple only	93	11.0	2,924	19.7	5,928	18.2	243,973	30.7
Couple with children	-8	-1.9	970	12.1	1,649	8.3	155,831	16.0
Single parent	11	4.9	685	14.8	1,519	13.6	82,363	24.7
Multiple and Other family households	2	7.4	83	9.8	180	8.6	25,804	23.2
Lone person	167	23.1	3,699	28.8	8,400	28.5	288,220	37.8
Group	-3	-5.7	140	11.5	311	10.2	23,559	17.8
Total households	262	11.2	8,500	20.0	17,986	18.3	819,749	26.4

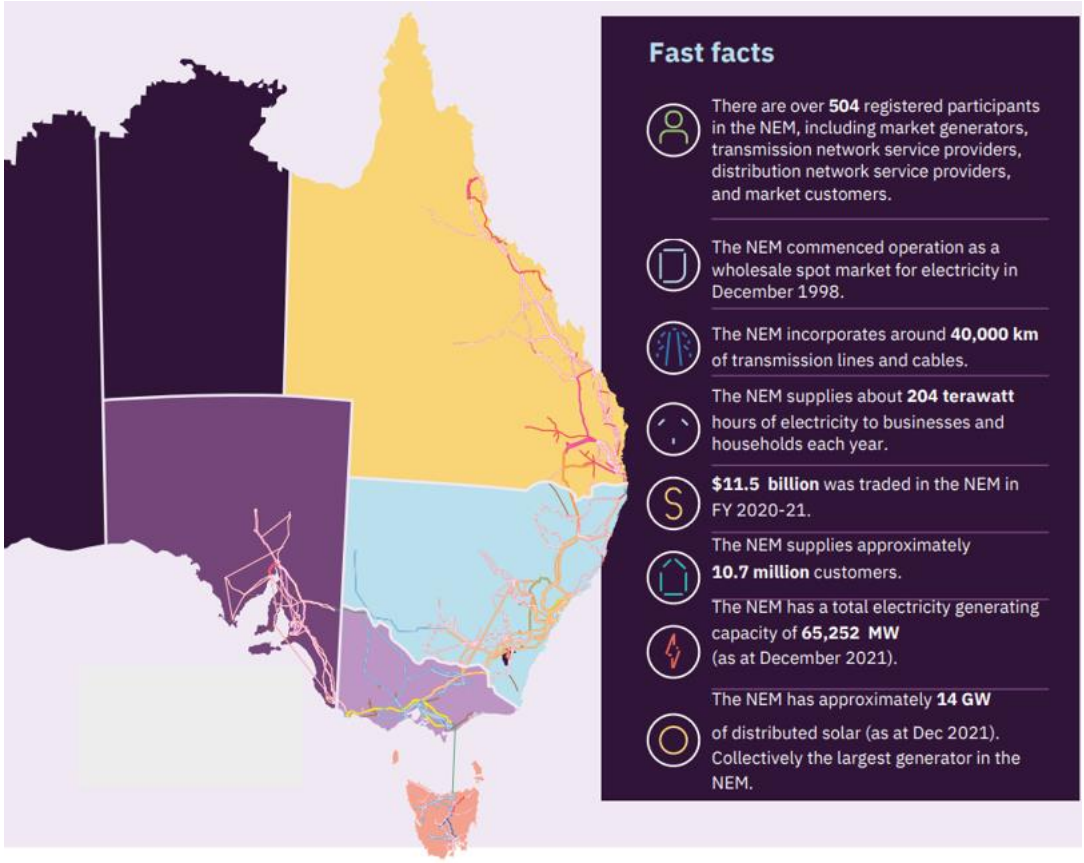
A7.5 Working population profile

Table A7.9: Workforce profile information (ABS Census 2021)

	SA2 (%)	LGA (%)	SA4 (%)	NSW (%)
Occupation				
Managers	18.2	12.3	12.0	14.6
Technicians and Trades Workers	14.0	14.5	14.1	11.9
Labourers	14.4	12.6	11.6	8.2
Professionals	12.4	16.6	18.1	25.8
Community and Personal Services Workers	12.5	15.0	15.6	10.6
Machinery Operators and Drivers	9.6	6.2	5.7	6.0
Clerical and Administrative Workers	9.1	10.6	11.2	13.0
Sales Workers	7.7	10.1	9.7	8.0
Industry of employment (count of employed persons, top responses)				
Beef Cattle Farming (Specialised)	8.6	-	-	0.4
Hospitals (except Psychiatric Hospitals)	3.4	4.5	4.7	4.2
Supermarket and Grocery Stores	3.4	3.3	3.3	2.5
Coal Mining	3.3	-	-	0.6
Local Government Administration	3.3	-	-	1.3
Participation in the labour force				
In the labour force	46.3	43.9	47.2	58.7
Not in the labour force	47.3	48.6	46.1	35.5
Not stated	6.5	7.4	6.6	5.9
Employment status				
Worked full time	49.4	47.9	49.2	55.2
Worked part-time	36.9	38.3	38.1	29.7
Away from work	8.5	7.6	6.9	10.2
Employment status – parents in couple families (selected data [%])				
Both employed full time	14.1	12.9	14.9	21.7
One employed full time, one employed part time	15.8	15.2	17.0	18.2
Both not working	35.8	40.6	36.6	22.9
Employment data[36] (%)				
Unemployment rate	3.5	4.1	3.8	3.4[37]

[36] Jobs and Skills Australia; Small Area Labour Market (SALM) data, December 2023 (SA2 and LGA) Most recently published data, released 29 April 2024.
[37] SA4 and NSW data for December 2023, to align with SALM data. SA4 and NSW rates in April 2024 were 2.0% (SA4) and 4.2% (NSW).

Annexure 8: National Electricity Market (NEM) schematic



Annexure 9: Copy of community survey

STRATFORD RENEWABLE ENERGY HUB – ONLINE SURVEY QUESTIONS

Introduction

The purpose of this survey is to inform the social impact assessment for the proposed Stratford Renewable Energy Hub (SREH). Yancoal is proposing to develop the SREH at Stratford following the completion of mining. It represents an opportunity to transition the Stratford site from an operating mine into a renewable energy project.

A social impact assessment is being prepared to identify perceived and potential social impacts of the project based on the local and regional setting and stakeholder engagement. These survey questions are geared towards people who live and/or work in the Gloucester Valley area but we welcome others feedback as well.

This survey is anonymous, but we will be asking demographic related questions to help us analyse the results.

General questions about the Gloucester Valley:

1. What do you think about renewable energy development in the Gloucester Valley?

- ◯ Support
- ◯ Do not support
- ◯ Neutral
- ◯ Unsure

2. What do you value most about the area?

2. What do you value most about the area?

3. What do you value most about your community?

Project Related Questions:

4. What do you think may be positive about the project for the area?

- [ ] Reuse of mine sites
- [ ] Direct benefit for some local businesses
- [ ] Positive for the local economy
- [ ] It will keep some people in town
- [ ] Positive for the environment
- [ ] Increase in tourism
- [ ] Ongoing investment in projects in the region by Yancoal
- [ ] Jobs
- [ ] Other (please specify)

5. What do you think may be negative about the project for the area?

- [ ] Construction traffic
- [ ] Effects of non-resident construction workforce
- [ ] Visual effects
- [ ] Clearing of native vegetation
- [ ] Risk to native fauna; loss of agriculture land, detracts from rural amenity/landscape
- [ ] Safety aspects
- [ ] Other (please specify)

6. What do you think the overall effect of the project will be for the area?

- ◯ Positive
- ◯ Negative
- ◯ Neutral
- ◯ Unsure

7. How do you think the project may affect you?

8. Have you previously communicated with Yancoal? If yes, what has been discussed?

9. What is your preferred form of communication for the Project?

- [ ] Website
- [ ] Newsletter
- [ ] E-Newsletter
- [ ] One on one meeting
- [ ] Open day

10. Any other comments?

Demographics:

11. What town, locality or area do you live in?

- ◯ Gloucester & surrounds
- ◯ Hunter Valley
- ◯ Other

12. How long have you lived in this town, locality or area?

- ◯ 0-5 years
- ◯ 6-10 years
- ◯ 11-20 years
- ◯ 20+ years

13. How many people live in your household?

- ◯ 1
- ◯ 2
- ◯ 3
- ◯ 4
- ◯ 5
- ◯ 6
- ◯ More than 6

14. What age groups live in your household?

- ☐ 0-14
- ☐ 15-29
- ☐ 30-44
- ☐ 45-59
- ☐ 60-74
- ☐ 75+

15. Select your gender

- ◯ Male
- ◯ Female
- ◯ Prefer not to answer

16. Which best describes you?

- ◯ White/Caucasian
- ◯ Aboriginal
- ◯ Torres Strait Islander
- ◯ Prefer not to answer
- ◯ Multiple ethnicity/other (please specify)

17. Which best describes your employment industry/status?

- ◯ Mining
- ◯ Agriculture
- ◯ Manufacturing
- ◯ Tourism
- ◯ Public servant
- ◯ Health care
- ◯ Student
- ◯ Retired
- ◯ Unemployed
- ◯ Other

18. Would you like to provide additional feedback? If yes, please contact us on sreh.feedback@yancoal.com.au

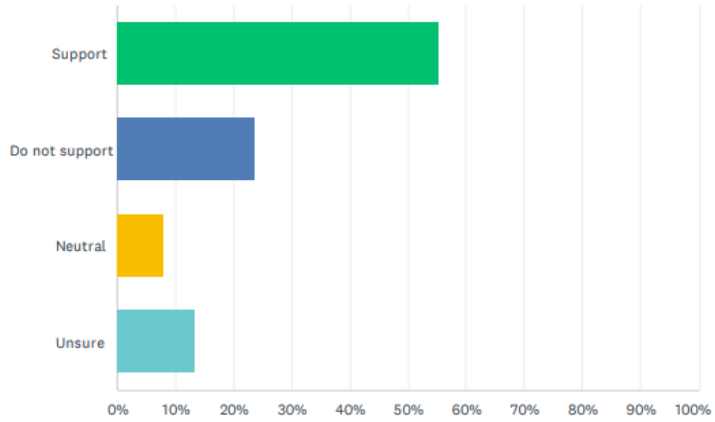
- ◯ Yes
- ◯ No

Annexure 10: Community survey results summary

STRATFORD RENEWABLE ENERGY HUB - ONLINE SURVEY QUESTIONS SurveyMonkey

Q1 What do you think about renewable energy development in the Gloucester Valley?

Answered: 38 Skipped: 0



ANSWER CHOICES	RESPONSES	
Support	55.26%	21
Do not support	23.68%	9
Neutral	7.89%	3
Unsure	13.16%	5
TOTAL		38

1 / 25

Q2 What do you value most about the area?

Answered: 38 Skipped: 0

#	RESPONSES	DATE
1	Open space , great veiws	4/22/2024 1:29 PM
2	Community and national parks	4/14/2024 12:44 PM
3	Rural lifestyle	4/14/2024 12:40 PM
4	The countryside, the people and the way of life	4/12/2024 9:33 PM
5	Healthy environment. Scenery.	4/12/2024 6:42 PM
6	The beautiful countryside & the clear clean air	4/12/2024 2:00 PM
7	The people and the unspoilt environment	4/12/2024 12:52 PM
8	Rural setting surrounded by farmland and National Parks	4/11/2024 7:28 AM
9	Natural beauty and the volume of wildlife in the area.	4/11/2024 6:48 AM
10	The natural environment which you are destroying	4/10/2024 10:30 PM
11	Pristine natural environment	4/10/2024 9:04 PM
12	Its beauty	4/10/2024 7:54 PM
13	The rivers and beautiful countryside	4/10/2024 7:44 PM
14	Was raised in Gloucester. It has been sad to see the slow decline of the town as businesses have closed down.	4/10/2024 7:13 PM
15	Well it use to be clean air clean water and the beauty of the natural environment but 2 coal mines at Duralie and Stratford have ruined that. So a t the moment the thing I value the most is seeing the mines disappear and return to natural environment	4/10/2024 7:04 PM
16	Agricultural	4/10/2024 6:42 PM
17	A thriving agricultural area, which supports both the environment and agriculture together	4/10/2024 6:32 PM
18	Farming	4/10/2024 5:55 PM
19	Pristine landscape and water. Natural environment and well managed agricultural land.	4/10/2024 5:52 PM
20	Beauty	4/10/2024 5:42 PM
21	That the town is thriving (which it isn't at the moment) We need industry and employment to keep the town running.	4/10/2024 5:28 PM
22	Fresh air, beautiful surroundings, community,	4/10/2024 5:20 PM
23	Views, farming, lack of traffic	4/10/2024 5:06 PM
24	Country. Beautiful landscape. Employment	4/10/2024 4:56 PM
25	Rural living. Country lifestyle. Away from the city.	4/10/2024 4:56 PM
26	Clean air and water.	4/10/2024 4:44 PM
27	it's not overpopulated	4/10/2024 4:37 PM
28	It is pristine	4/10/2024 4:37 PM
29	The beautiful countryside & rainforests	4/10/2024 4:23 PM
30	The Gloucester community is very supportive of projects that are community supportive.	4/5/2024 6:58 AM

STRATFORD RENEWABLE ENERGY HUB – ONLINE SURVEY QUESTIONS SurveyMonkey

31	Country surrounds, wilderness	4/5/2024 6:34 AM
32	Environmental aspect	3/29/2024 7:12 AM
33	It's our home. The green pastures, cattle grazing & farmers working their properties.	3/27/2024 1:21 PM
34	Lifestyle	3/25/2024 4:17 PM
35	Environment and rural setting	3/18/2024 3:11 PM
36	It's rural character, scenic beauty, biodiversity and Gloucester township.	3/16/2024 9:41 AM
37	The environment and value of the people who live in the area and new job opportunities for people in the local community	3/15/2024 2:25 PM
38	Job opportunities	3/13/2024 9:07 AM

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Q3 What do you value most about your community?

Answered: 34 Skipped: 4

#	RESPONSES	DATE
1	Nice quiet community	4/22/2024 1:29 PM
2	The community itself	4/14/2024 12:44 PM
3	Community spirit	4/14/2024 12:40 PM
4	The helpfulness and friendship	4/12/2024 9:33 PM
5	-	4/12/2024 6:42 PM
6	Friendliness & support	4/12/2024 2:00 PM
7	There are so many ways you can become involved in the community	4/12/2024 12:52 PM
8	It's separated from the city lifestyle	4/11/2024 7:28 AM
9	The amazing people I get to meet on a daily basis.	4/11/2024 6:48 AM
10	Diversity, creativity, mutual love for nature. Small town lide	4/10/2024 10:30 PM
11	Peaceful, Community connectedness, safety and low impact of people's presence on the area	4/10/2024 9:04 PM
12	Safety	4/10/2024 7:54 PM
13	The whole place. It is an amazing town.	4/10/2024 7:13 PM
14	Rural communities stick together and help people in need	4/10/2024 7:04 PM
15	Clean fresh country	4/10/2024 6:42 PM
16	Connection. Working together. No division. Support in challenging times. Community to raise our children.	4/10/2024 5:52 PM
17	Inclusiveness	4/10/2024 5:42 PM
18	That we have the businesses and infrastructure to support our population	4/10/2024 5:28 PM
19	Connection, away from the city, country living	4/10/2024 5:20 PM
20	Economically viable, environmentally appropriate use of land	4/10/2024 5:06 PM
21	Country lifestyle. Friendly Community atmosphere. Safe.	4/10/2024 4:56 PM
22	Friendly. Relaxed. Rural views.	4/10/2024 4:56 PM
23	Healh facilities, Sporting facilities, Social support within the community. Work opportunities up until now.	4/10/2024 4:44 PM
24	Safety and willingness to lend a hand	4/10/2024 4:37 PM
25	Locals looking after locals	4/10/2024 4:37 PM
26	My life long home with a friendly, caring, proactive community.	4/10/2024 4:23 PM
27	Friendly, good community spirit.	4/5/2024 6:34 AM
28	Social support. Cohesive Progressive	3/29/2024 7:12 AM
29	The cooperative nature of people living on the land	3/27/2024 1:21 PM
30	Community values	3/25/2024 4:17 PM
31	Connectedness	3/18/2024 3:11 PM

STRATFORD RENEWABLE ENERGY HUB - ONLINE SURVEY QUESTIONS		SurveyMonkey
32	It is a safe and friendly community with a reasonable level of facilities for all age groups.	3/16/2024 9:41 AM
33	The way people care for their area and support each other	3/15/2024 2:25 PM
34	Community spirit	3/13/2024 9:07 AM

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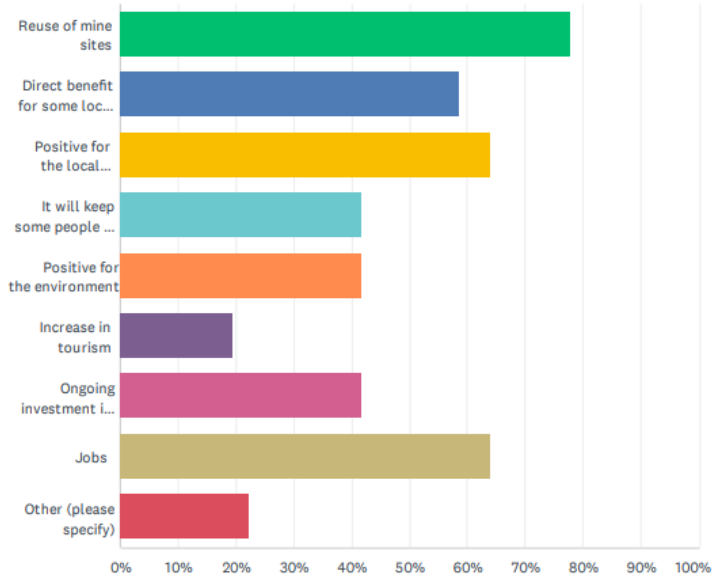
Q4 What do you think may be positive about the project for the area?

Answered: 36 Skipped: 2



ANSWER CHOICES	RESPONSES	
Reuse of mine sites	77.78%	28
Direct benefit for some local businesses	58.33%	21
Positive for the local economy	63.89%	23
It will keep some people in town	41.67%	15
Positive for the environment	41.67%	15
Increase in tourism	19.44%	7
Ongoing investment in projects in the region by Yancoal	41.67%	15
Jobs	63.89%	23
Other (please specify)	22.22%	8
Total Respondents: 36		

#	OTHER (PLEASE SPECIFY)	DATE
1	Nothing	4/22/2024 1:29 PM

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STRATFORD RENEWABLE ENERGY HUB – ONLINE SURVEY QUESTIONS SurveyMonkey

2	Can't see any pisitives	4/10/2024 10:30 PM
3	Renewable is costly and a waste of time	4/10/2024 7:54 PM
4	Hydro is fine but not the panels	4/10/2024 6:32 PM
5	Finally yancoal has acted on annEnergise Gloucester idea!	4/10/2024 5:42 PM
6	Nothing	4/10/2024 5:20 PM
7	Good use of the former mine site	4/10/2024 4:44 PM
8	Climate change reducing	3/29/2024 7:12 AM

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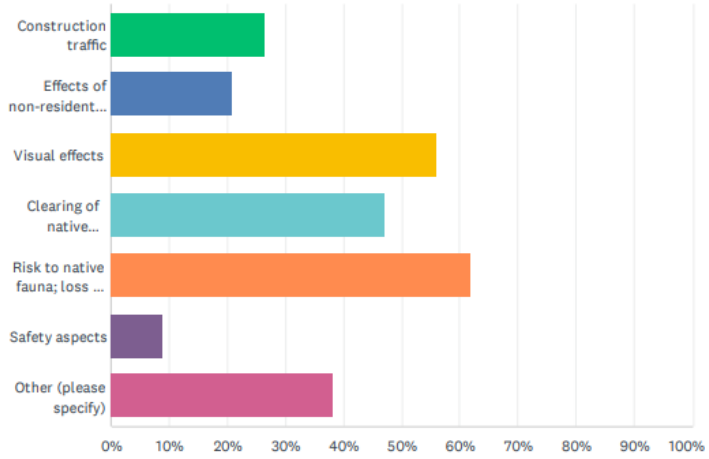
STRATFORD RENEWABLE ENERGY HUB - ONLINE SURVEY QUESTIONS SurveyMonkey

Q5 What do you think may be negative about the project for the area?

Answered: 34 Skipped: 4



ANSWER CHOICES	RESPONSES	
Construction traffic	26.47%	9
Effects of non-resident construction workforce	20.59%	7
Visual effects	55.88%	19
Clearing of native vegetation	47.06%	16
Risk to native fauna; loss of agriculture land, detracts from rural amenity/landscape	61.76%	21
Safety aspects	8.82%	3
Other (please specify)	38.24%	13
Total Respondents: 34		

#	OTHER (PLEASE SPECIFY)	DATE
1	I don't believe there is a negative	4/14/2024 12:44 PM
2	No negative - only positive	4/14/2024 12:40 PM
3	No negative aspects unless you live next door and the visual changes from grass to solar.	4/12/2024 9:33 PM
4	Making money off our land. Go do something ethical instead!	4/10/2024 10:30 PM
5	Waste of tax payers money	4/10/2024 7:54 PM
6	Nothing. Gloucester needs this.	4/10/2024 7:13 PM
7	There is nothing green about renewable energy what does it take to make solar panels, what	4/10/2024 7:04 PM

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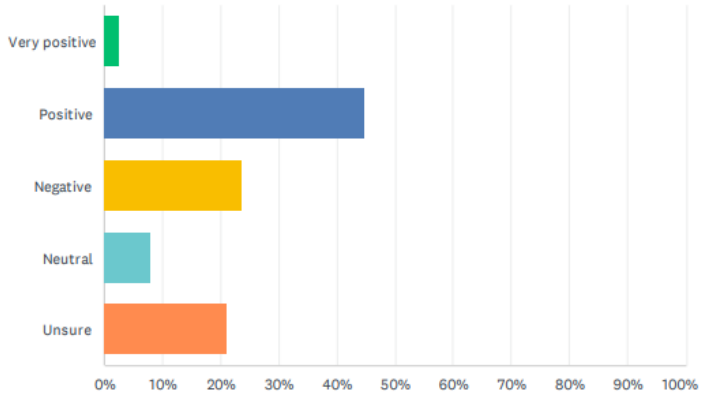
STRATFORD RENEWABLE ENERGY HUB – ONLINE SURVEY QUESTIONS SurveyMonkey

	does it take to make wind turbines, what does it take to make batteries lots of mining for the minerals, what is the outcome of pumped hydro system	
8	Loss of energy security, more corporate investment instead of locally owned projects	4/10/2024 5:52 PM
9	Nil	4/10/2024 4:37 PM
10	None	4/10/2024 4:23 PM
11	In the past there have been releases of water in the Avon River in times of drought for stock water purposes. This venture would probably put an end to that occurring in the future.	4/5/2024 6:58 AM
12	Loss of land value of properties.	4/5/2024 6:34 AM
13	The rehab will be diminished & less land use will be returned to agriculture.	3/27/2024 1:21 PM

STRATFORD RENEWABLE ENERGY HUB - ONLINE SURVEY QUESTIONS SurveyMonkey

Q6 What do you think the overall effect of the project will be for the area?

Answered: 38 Skipped: 0



ANSWER CHOICES	RESPONSES	
Very positive	2.63%	1
Positive	44.74%	17
Negative	23.68%	9
Neutral	7.89%	3
Unsure	21.05%	8
TOTAL		38

STRATFORD RENEWABLE ENERGY HUB – ONLINE SURVEY QUESTIONS SurveyMonkey

Q7 How do you think the project may affect you?

Answered: 37 Skipped: 1

#	RESPONSES	DATE
1	Solar panel's are part of the climate change.	4/22/2024 1:29 PM
2	Creation of jobs especially operator roles	4/14/2024 12:44 PM
3	Employment possibilities	4/14/2024 12:40 PM
4	Nothing except Cheaper electricity.	4/12/2024 9:33 PM
5	I would be upset if it had a negative effect on environment	4/12/2024 6:42 PM
6	I do not expect it to affect me personally	4/12/2024 2:00 PM
7	Depending on if cheap renewable energy is offered to the community	4/12/2024 12:52 PM
8	Negative - visual of solar from main roads. Positive - major project for the area	4/11/2024 7:28 AM
9	I don't think it will.	4/11/2024 6:48 AM
10	I may consider moving further away to keep the peace I need	4/10/2024 10:30 PM
11	Depends how it is undertaken as to whether I will be affected	4/10/2024 9:04 PM
12	Waste of my time and so much more could be done in other areas ie Aged Care, housing	4/10/2024 7:54 PM
13	I don't think it will directly affect me, however if it creates jobs in the area I think that will be of benefit	4/10/2024 7:44 PM
14	Slightly, it'll at all. My parents are still in the area out at Rookhurst, north-west of the Gloucester township. I still visit regularly with my children to the family farm.	4/10/2024 7:13 PM
15	Directly not so much as Stratford coal mine is further up our farm Indirectly It appears to me that this is an attempt by Yancoal to now seem green after 20 plus years of rapping the Stratford and Duralie valleys of coal Would love to see the business plan for the proposed green project	4/10/2024 7:04 PM
16	Hope it doesn't	4/10/2024 6:42 PM
17	We will see the solar panels directly so our property values will decrease	4/10/2024 6:32 PM
18	Affect land value and detract from tourism potential. This is the main entrance to Gloucester from Newcastle and Sydney.	4/10/2024 5:52 PM
19	Not a lot	4/10/2024 5:42 PM
20	Unsure	4/10/2024 5:28 PM
21	General living, horrible sites on the Buckets way,	4/10/2024 5:20 PM
22	I dont know enough about it	4/10/2024 5:06 PM
23	I don't think it will. Visually only impact will be negative when driving past	4/10/2024 4:56 PM
24	Positive if solar is removed from view. Negative is solar is viewable from main roads. Even behind trees.	4/10/2024 4:56 PM
25	Help ensure power supplies in the future.	4/10/2024 4:44 PM
26	very little	4/10/2024 4:37 PM
27	More people	4/10/2024 4:37 PM
28	It won't personally but happy to see this go ahead!	4/10/2024 4:23 PM

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STRATFORD RENEWABLE ENERGY HUB – ONLINE SURVEY QUESTIONS SurveyMonkey

29	Hopefully it may stabilize or decrease the cost of electricity.	4/5/2024 6:58 AM
30	Visual impacts. Loss of property value. Aesthetically negative loss of our rural views.	4/5/2024 6:34 AM
31	Assist in monitoring climate change and medical issues	3/29/2024 7:12 AM
32	Visual impact from our house of new dam & proximity of solar panels to the main road.	3/27/2024 1:21 PM
33	If the project reaches conclusion it may have visual & environmental impacts on residents.	3/25/2024 4:17 PM
34	Hopefully get more reliable energy	3/18/2024 3:11 PM
35	Can't say at this stage because I don't know anything about the project's detail.	3/16/2024 9:41 AM
36	It won't affect me but if it doesn't go ahead it will effect the town when families have to move away for work	3/15/2024 2:25 PM
37	Positivity	3/13/2024 9:07 AM

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STRATFORD RENEWABLE ENERGY HUB - ONLINE SURVEY QUESTIONS SurveyMonkey

Q8 Have you previously communicated with Yancoal? If yes, what has been discussed?

Answered: 36 Skipped: 3

#	RESPONSES	DATE
1	No	4/22/2024 1:29 PM
2	No	4/14/2024 12:44 PM
3	No	4/14/2024 12:40 PM
4	Went to community forum at council.	4/12/2024 9:33 PM
5	No	4/12/2024 6:42 PM
6	No	4/12/2024 2:00 PM
7	N/A	4/12/2024 12:52 PM
8	No	4/11/2024 7:28 AM
9	No.	4/11/2024 6:48 AM
10	Impact of coal mining on environment and people long term.	4/10/2024 9:04 PM
11	No	4/10/2024 7:54 PM
12	No	4/10/2024 7:44 PM
13	Not in the Gloucester area.	4/10/2024 7:13 PM
14	No	4/10/2024 7:04 PM
15	No	4/10/2024 6:42 PM
16	Yes the location of the panels property values Visual impacts	4/10/2024 6:32 PM
17	No	4/10/2024 5:52 PM
18	Yes I offered to work with them to build a solar and pumped hydro facility as a board member of Energise Gloucester. I have more ideas on innovative uses for the site which will leverage some of its other assets as well! [redacted] if you are interested!	4/10/2024 5:42 PM
19	No	4/10/2024 5:28 PM
20	No	4/10/2024 5:20 PM
21	No	4/10/2024 5:06 PM
22	Attended information session. Info obtained	4/10/2024 4:56 PM
23	No	4/10/2024 4:56 PM
24	no	4/10/2024 4:44 PM
25	no	4/10/2024 4:37 PM
26	No	4/10/2024 4:23 PM
27	I attended the Stratford Hall information evening on the 25th March	4/5/2024 6:58 AM
28	Noise from the mine and lights interrupting sleep from mine site.	4/5/2024 6:34 AM
29	No	3/29/2024 7:12 AM
30	Earlier I discussed my numerous complaints about lighting & the 'white cliffs of Stratford' that have scared the environment. Also I have expressed my Solar concerns & questions in	3/27/2024 1:21 PM

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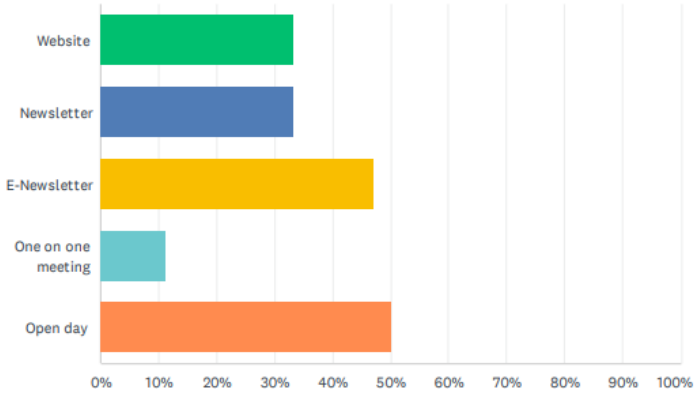
	emails. Jared has been proactive & open.	
31	YES Discussions on noise, dust & visual pollution	3/25/2024 4:17 PM
32	No	3/18/2024 3:11 PM
33	No	3/16/2024 9:41 AM
34	No but have kept updated on the newsletters	3/15/2024 2:25 PM
35	Yes the potential for the project	3/13/2024 9:07 AM

Q9 What is your preferred form of communication for the Project?

Answered: 36 Skipped: 2



ANSWER CHOICES	RESPONSES	
Website	33.33%	12
Newsletter	33.33%	12
E-Newsletter	47.22%	17
One on one meeting	11.11%	4
Open day	50.00%	18
Total Respondents: 36		

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Q10 Any other comments?

Answered: 16 Skipped: 22

#	RESPONSES	DATE
1	None	4/14/2024 12:44 PM
2	We think it's great for the town and the area. We appreciate what Yancoal has done to support our community.	4/14/2024 12:40 PM
3	Opening the coal mine to the public would be great. A few days per year to understand how it works now, and what changes there will be when reconfigured.	4/12/2024 9:33 PM
4	Make sure the project is open to support tourism.	4/11/2024 7:28 AM
5	Please leave our town alibe	4/10/2024 10:30 PM
6	Need to be very upfront about the project and keep people advised of all that will be done.	4/10/2024 9:04 PM
7	Preferred communication is a community meeting. Open and transparent conversation with those that are concerned for ALL to hear.	4/10/2024 5:52 PM
8	The closure of the mine will have a significant economic effect on Gloucester (we are already getting a taste of it with the recent reduction in the workforce). To reuse the area that would bring a STRONG ongoing economic boost to the town is vital	4/10/2024 5:28 PM
9	I strongly disagree with this project	4/10/2024 5:20 PM
10	Panels need to be removed from main road/view more. They will be seen behind tree screening still	4/10/2024 4:56 PM
11	Remove solar from main road areas. This will decrease tourism to our beautiful area.	4/10/2024 4:56 PM
12	Go for it	4/10/2024 4:37 PM
13	More information about mine site rehabilitation and air and noise pollution improvements	3/29/2024 7:12 AM
14	Re Yancoal's social license, I believe there should be an apology & explanation by CEO/ Board to the community about the change in Yancoal's plans from the long held expectation of the land being returned to prior agricultural use.	3/27/2024 1:21 PM
15	Please hold another local session when EIS completed. [redacted]	3/25/2024 4:17 PM
16	This will get great for our town	3/15/2024 2:25 PM

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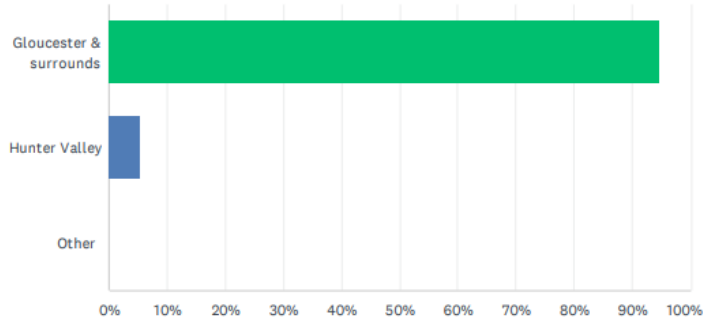
Q11 What town, locality or area do you live in?

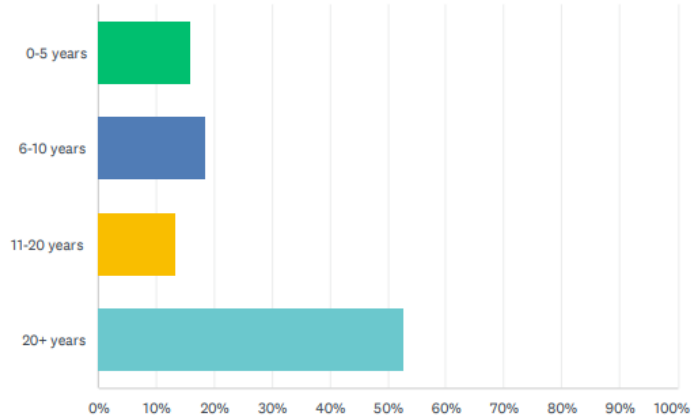
Answered: 38 Skipped: 0



ANSWER CHOICES	RESPONSES	
Gloucester & surrounds	94.74%	36
Hunter Valley	5.26%	2
Other	0.00%	0
TOTAL		38

Q12 How long have you lived in this town, locality or area?

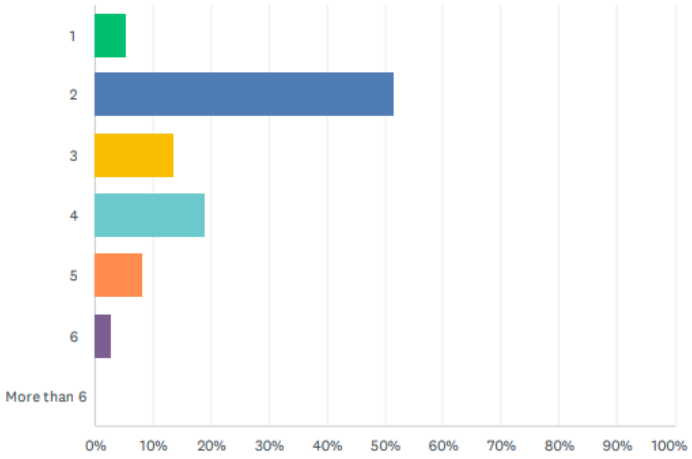
Answered: 38 Skipped: 0



ANSWER CHOICES	RESPONSES	
0-5 years	15.79%	6
6-10 years	18.42%	7
11-20 years	13.16%	5
20+ years	52.63%	20
TOTAL		38

Q13 How many people live in your household?

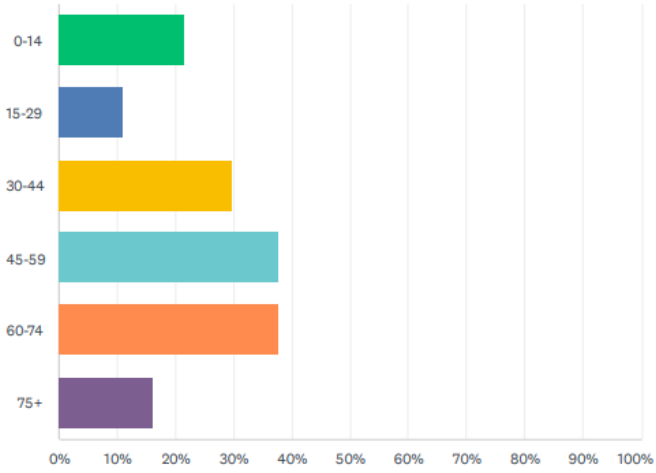
Answered: 37 Skipped: 1



ANSWER CHOICES	RESPONSES	
1	5.41%	2
2	51.35%	19
3	13.51%	5
4	18.92%	7
5	8.11%	3
6	2.70%	1
More than 6	0.00%	0
TOTAL		37

Q14 What age groups live in your household?

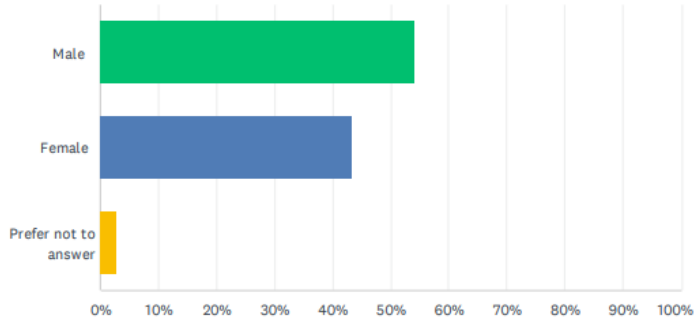
Answered: 37 Skipped: 1



ANSWER CHOICES	RESPONSES	
0-14	21.62%	8
15-29	10.81%	4
30-44	29.73%	11
45-59	37.84%	14
60-74	37.84%	14
75+	16.22%	6
Total Respondents: 37		

Q15 Select your gender

Answered: 37 Skipped: 1



ANSWER CHOICES	RESPONSES	
Male	54.05%	20
Female	43.24%	16
Prefer not to answer	2.70%	1
TOTAL		37

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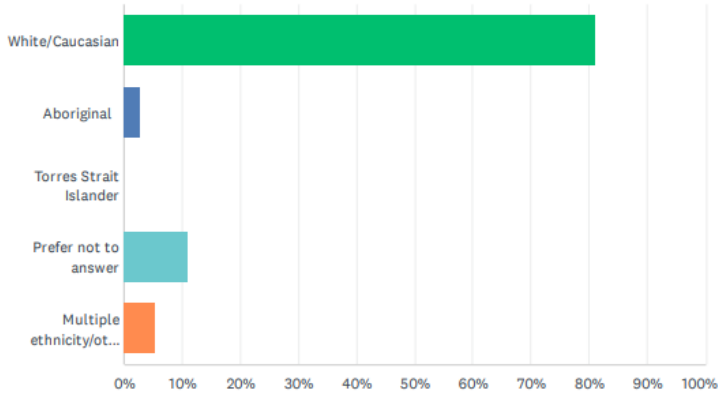
Q16 Which best describes you?

Answered: 37 Skipped: 1



ANSWER CHOICES	RESPONSES	
White/Caucasian	81.08%	30
Aboriginal	2.70%	1
Torres Strait Islander	0.00%	0
Prefer not to answer	10.81%	4
Multiple ethnicity/other (please specify)	5.41%	2
TOTAL		37

#	MULTIPLE ETHNICITY/OTHER (PLEASE SPECIFY)	DATE
1	Greek	4/10/2024 7:54 PM
2	What does it matter	4/10/2024 6:32 PM

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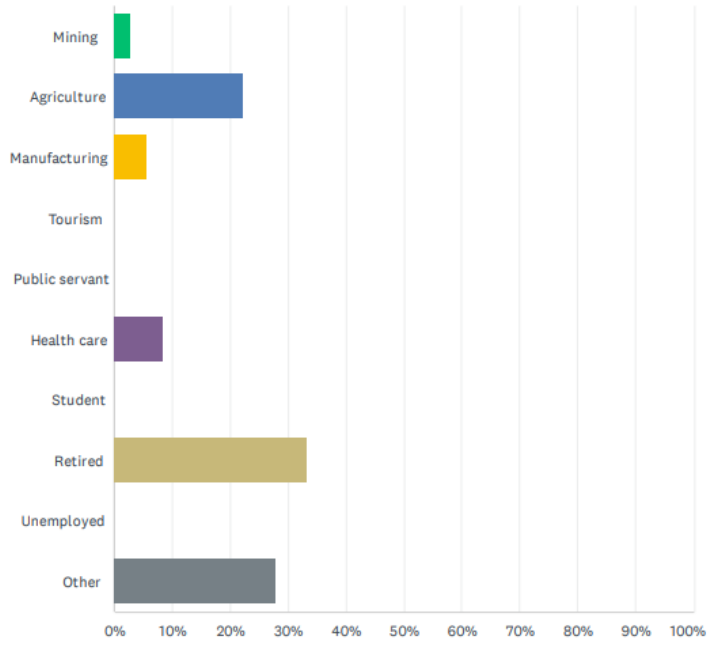
STRATFORD RENEWABLE ENERGY HUB - ONLINE SURVEY QUESTIONS SurveyMonkey

Q17 Which best describes your employment industry/status?

Answered: 36 Skipped: 2



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STRATFORD RENEWABLE ENERGY HUB – ONLINE SURVEY QUESTIONS SurveyMonkey

ANSWER CHOICES	RESPONSES	
Mining	2.78%	1
Agriculture	22.22%	8
Manufacturing	5.56%	2
Tourism	0.00%	0
Public servant	0.00%	0
Health care	8.33%	3
Student	0.00%	0
Retired	33.33%	12
Unemployed	0.00%	0
Other	27.78%	10
TOTAL		36

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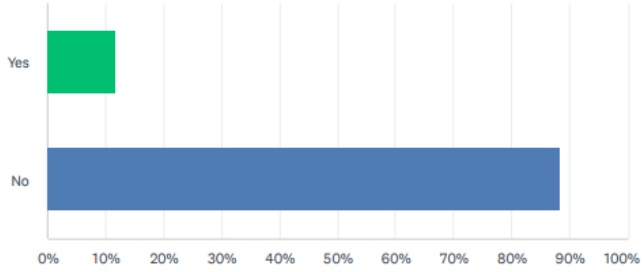
STRATFORD RENEWABLE ENERGY HUB - ONLINE SURVEY QUESTIONS SurveyMonkey

Q18 Would you like to provide additional feedback? If yes, please contact us on sreh.feedback@yancoal.com.au

Answered: 34 Skipped: 4



ANSWER CHOICES	RESPONSES	
Yes	11.76%	4
No	88.24%	30
TOTAL		34

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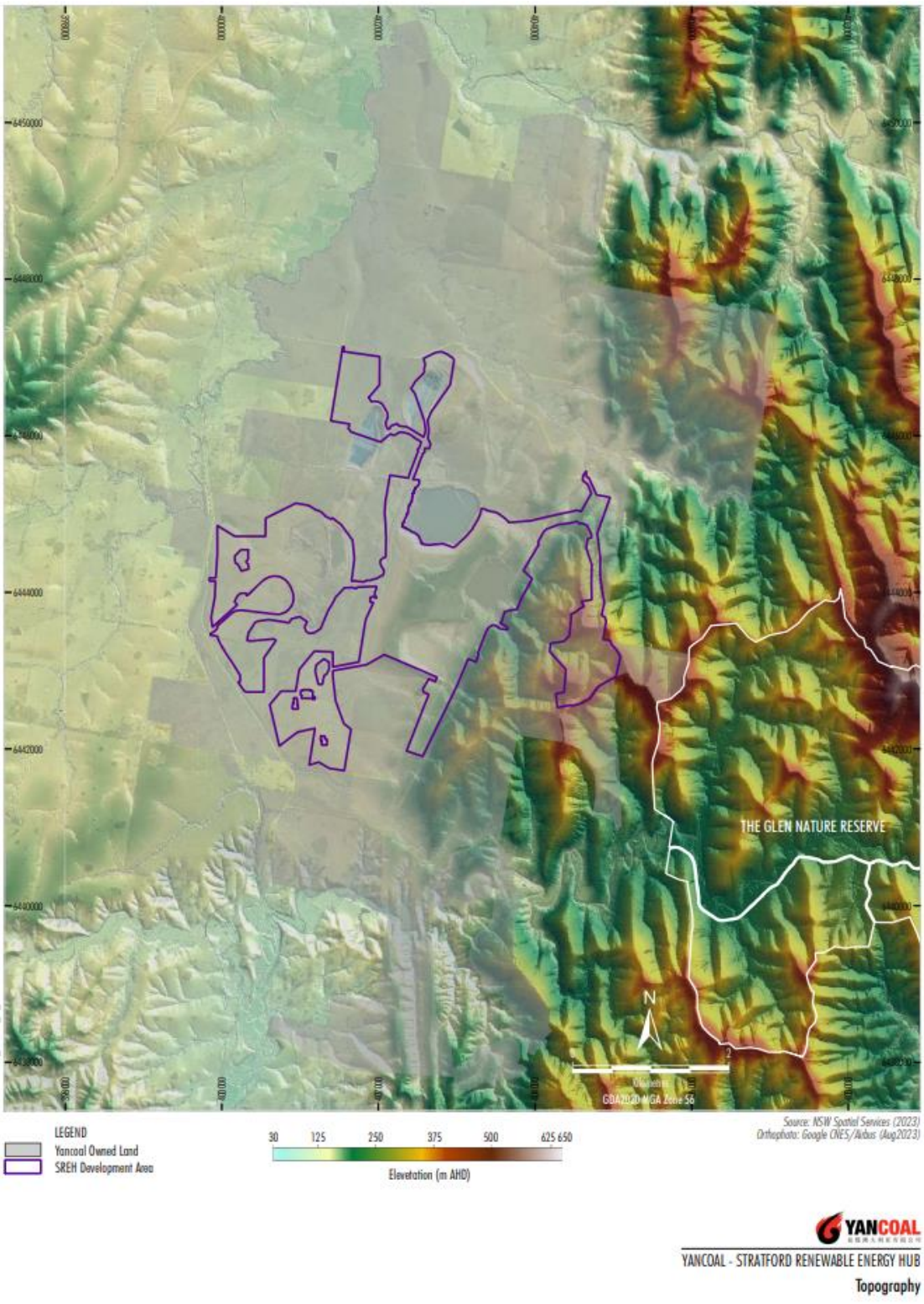
Annexure 11: Conservation area location diagrams

The Glen Nature Reserve and Stratford Mining Complex (SMC)/Stratford Renewable Energy Hub (SREH) site



Waulinbakh Wildlife Sanctuary location