Port of Newcastle

Clean Energy Precinct Concept Plan

Social Impact Assessment Scoping Report

April 2023

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Clean Energy Precinct Concept Plan
Social Impact Assessment Scoping Report

Port of Newcastle

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WSP acknowledges that every project we work on takes place on First Peoples lands.
We recognise Aboriginal and Torres Strait Islander Peoples as the first scientists and engineers and pay our respects to Elders past and present.

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Glossary

Clean Energy Precinct	Proposed precinct for clean energy infrastructure and projects
Concept Plan	Plan showing potential future development of the precinct allowing for flexibility subject to stakeholder engagement, emerging technologies and clean energy developer interest over time
Green Hydrogen	Hydrogen produced using renewable electricity through a process called electrolysis, which results in low or zero carbon emissions
Green Ammonia	Ammonia that is renewable and carbon-free, one way it is produced is by using hydrogen from water electrolysis and nitrogen separated from the air, both hydrogen and nitrogen are reacted together at high temperatures and pressures to produce ammonia
Phase 1 SIA	The phase of Social Impact Assessment (SIA) for the project in which likely social impacts are scoped, next steps and opportunities for community engagement are identified, and the required complexity for Phase 2 SIA is determined.
Phase 2 SIA	The phase of SIA for the project in which the community engagement opportunities identified at Phase 1 SIA are implemented, scoped social impacts are further investigated and a Social Impact Management Plan is created.
Renewable Energy Zone (REZ)	Areas of high energy resource potential where strategic transmission infrastructure upgrades can connect multiple projects at lower cost (Australian Energy Market Operator, 2020)
Stage 1: lead-in infrastructure	— Electrical infrastructure (electrical connections, transmission and distribution corridors, substation and switchyard) — Water infrastructure (water supply connections, wastewater disposal connections and water infrastructure corridors) — Ancillary works including (but not limited to) site buildings, administration buildings, internal roads, car parking facilities, laydown areas, warehousing, trailer storage yards and associated works
Social locality	The social locality is the geographical areas in which direct and indirect impacts (positive and negative) are likely to occur. It includes the Statistical Areas Level (SAL) 3 area of Newcastle: and the Urban Centres and Localities (UCL) area of Tomago
The project	The proposed Clean Energy Precinct, staged future clean energy developments and associated infrastructure that would allow energy production, storage, distribution and export using common shared infrastructure

Abbreviations

ABS	Australian Bureau of Statistics
BC Act	*Biodiversity Conservation Act 2016* (NSW)
DPE	Department of Planning and Environment, New South Wales Government
EP&A Act	*Environmental Planning and Assessment Act 1979* (NSW)
EPBC Act	*Environment Protection and Biodiversity Conservation Act 1999* (Cth)
GGBF	Green and Golden Bell Frog
ha	Hectares
IRSAD	Index of Relative Socio-economic Advantage and Disadvantage
ISP	Integrated System Plan
LALC	Awabakal Local Aboriginal Land Council
KIWEF	Kooragang Island Waste Emplacement Facility
LGA	Local Government Area
m	Metre
MW	Megawatts
MWh	Megawatt hours
NCIG	Newcastle Coal Infrastructure Group
NSW	New South Wales
NSW DPE SIA Guideline	NSW Department of Planning and Environment Social Impact Assessment Guideline
O&M	Operations and Maintenance
PON	Port of Newcastle
REZ	Renewable Energy Zone
SIA scoping report	Social Impact Assessment scoping report
SAL	Suburbs and Localities
SEIFA	Socio-Economic Indexes for Areas
SIA	Social Impact Assessment
SIA scoping tool	DPE Social Impact Assessment Scoping Tool
SSD	State Significant Development
UCL	Urban Centres and Localities
The Project	Port of Newcastle Clean Energy Precinct

1 Introduction

1.1 Project overview

The Port of Newcastle (PON) propose to develop the new Clean Energy Precinct (the project), a facility for clean energy production on Kooragang Island in Newcastle, New South Wales (NSW). PON engaged WSP Australia Pty Ltd (WSP) to undertake this Social Impact Assessment (SIA) scoping report (SIA scoping report) for the project.

Once fully constructed, the project would facilitate clean energy production, storage, transmission, domestic distribution and international export using common user shared infrastructure. The first stages of the project would include the establishment of lead-in infrastructure (e.g. utilities, storage and transmission facilities), to enable the production, storage, distribution and export of clean energy types in future development stages (for example green hydrogen and green ammonia) as well as other potential future energy developments.

The PON is seeking State Significant Development (SSD) consent under Part 4, Division 4.7 of the *Environmental Planning and Assessment Act 1979* (EP&A Act). The project would be staged with the concept plan and stage 1 (lead-in infrastructure) as the subject of the SSD application.

As the national electricity market transitions towards renewable energy production, the project would help facilitate production, storage and transmission of clean energy, and assist with reducing fluctuations in the national electricity market. The project would therefore have a positive impact on assisting with the transition to renewable energy and reaching the NSW and Commonwealth zero emissions targets.

The project is proximate to three priority energy zones identified by New South Wales (NSW) Government, that being the Hunter-Central Coast Renewable Energy Zone (REZ), the Central West Orana REZ and the New England REZ. The project would support the broader goals and build of these REZ. The project would contribute to renewable energy production, storage and transmission to reach the NSW and Commonwealth zero emission targets.

1.2 About this document

This SIA scoping report is the first phase of undertaking an SIA for NSW SSD under the 2021 NSW Department of Planning and Environment Social Impact Assessment Guideline (NSW DPE SIA Guideline).

The SIA scoping report focuses on likely social issues before considering suitable refinement or other early responses. It also ensures the scale of assessment required is proportionate to the magnitude of the expected impacts next phase of the SIA (Phase 2 SIA).

The key objectives of the SIA scoping report are to:

- determine the preliminary local and regional social locality (Section 5)
- identify key communities and potentially affected stakeholders (Section 7)
- identify potential social impacts requiring further investigation in the Phase 2 SIA (Section 8)
- determine the complexity of Phase 2 SIA and research methods required (Section 10).

2 Project description

PON (the proponent) propose to develop the Clean Energy Precinct in Newcastle, NSW, that enables production, storage, distribution and export of clean energy such as green hydrogen and green ammonia using common user shared infrastructure. The project is located approximately 170 km (by road) north of Sydney and approximately 760 km south of Brisbane.

The project is located within the Newcastle Local Government Area (LGA) and Awabakal Local Aboriginal Land Council (LALC) area at the former Kooragang Island Waste Emplacement Facility (KIWEF) site on Kooragang Island (refer Figure 2.1). Existing land uses of the project site and surrounds are predominately industrial, shipping and port operations with environmental conservation land to the north.

Fully constructed, the project would facilitate clean energy production, storage, transmission, domestic distribution and international export. The first stage of the project would include the establishment of lead-in infrastructure including electrical infrastructure, water infrastructure and ancillary works, construction vehicle and workforce vehicle parking, construction laydown and stockpiles, and construction of an ammonia storage facility.

It is expected that construction of the lead-in infrastructure (Stage 1 of the project) would commence in early 2025 and take approximately two years to complete. During construction of all stages of the Clean Energy Precinct, is expected to generation around 5,261 jobs in the Hunter region. It is anticipated that the project would be operational by late 2026/early 2027.

A preliminary layout of the site concept is shown at Figure 2.1 and Table 2.1.

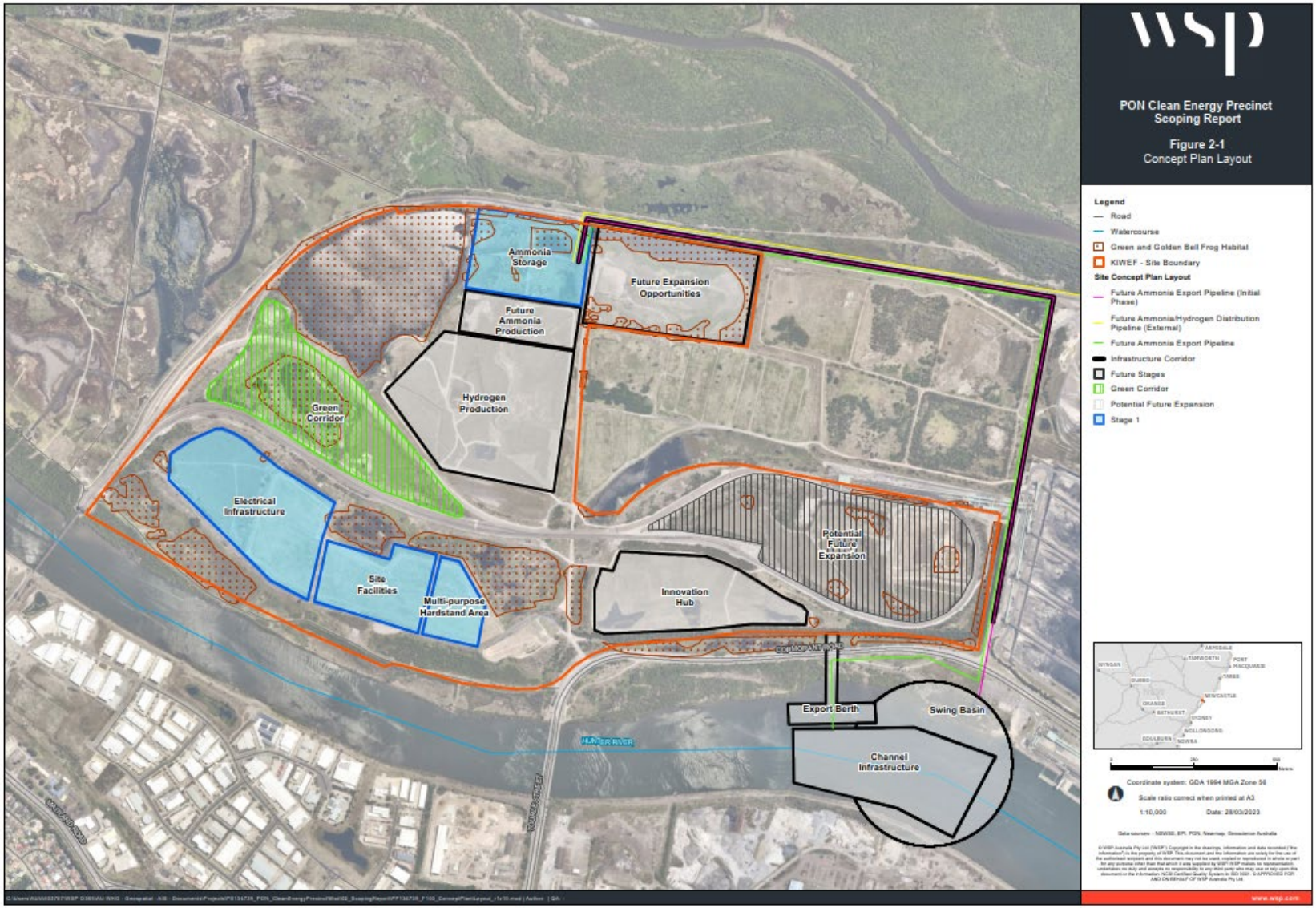

Figure 2.1 Preliminary layout of the site concept

Table 2.1 Summary of key components of the project

Component	Description
Concept development application	
Concept plan – Clean Energy Precinct	PON is seeking to establish a shovel-ready Clean Energy Precinct that enables production, storage, distribution and export of hydrogen and ammonia using common user shared infrastructure. Establishment of the Clean Energy Precinct would also support the broader build out of renewable energy zone developments.
Stage 1 of concept plan development	
Ancillary features	Key ancillary features for operation and maintenance of Stage 1 would include (but not be limited to): — site and administration facilities — internal roads — car parking — laydown areas — warehousing — storage yard.
Lead-in infrastructure	Stage 1 would involve the establishment of lead-in infrastructure to enable clean energy storage within the port. The proposed Stage 1 lead-in infrastructure would involve: — electrical infrastructure, including grid connection, transmission infrastructure and associated easements and corridors, substation and switchyard — water infrastructure, including pipeline connection, pipeline infrastructure and associated easements and corridors for water and sewer — buildings including site buildings, administration buildings and warehousing — roads and paved areas including internal roads, car parking facilities, storage yards and laydown areas.
Ammonia Storage Facilities	Stage 1 of the project would include construction and operation of an ammonia storage facility and associated pipelines to support existing ammonia production facilities within the port as well as enable future production of green ammonia as the demand grows with the clean energy transition. The storage facility is expected to be an approximately 30,000 tonnes double-walled ammonia storage tank.
Infrastructure corridor (internal)	Stage 1 of the project would include connection to water supply, wastewater disposal and electrical infrastructure (where required) and a dedicated infrastructure corridor would be constructed where practicable.
Dewatering	Dewatering would likely be required for construction of Stage 1 of the project.

Component	Description
Concept plan infrastructure – Stage 1 of concept plan development	
Transmission easement	Easements associated to the 330 kV connection into the switchyard and substation to be located on KIWEF.
Roads and car park	Internal Roads: Internal roads would be required to access the various process areas and the trailer staging area. The roads would be designed to accommodate prime movers coupled to a single semi-trailer and possibly B-doubles (prime mover coupled to two semi-trailers). A one-way road system would be implemented where practicable. Car Park: a surfaced parking area would be required and would be approximately 945 m^2 (subject to design refinement). Trailer Staging Area: A trailer staging area (approximately 120 metres x 126 metres) for trailers would be required. The trailer staging area would be sized for approximately 55 trailers with additional area provided to allow for manoeuvring the prime movers across the site. Laydown Area: A general laydown area would be provided with a minimum size of 500 metres by 100 metres. The laydown area would be gravel surfaced with some areas featuring a concrete pavement, and would be fenced and gated. The laydown area would be available during the construction period, in addition to other areas used during construction for the purpose of laying down goods and materials.
Administration buildings	A common administration building, including a control room, would be provided. The approximate size of this would be 365 m^2. The building would feature the following areas: — control room — laboratory — reception area — first aid room — open plan offices — secure offices — information technology and server room — meeting room — tour hosting room — storage room — crib room — locker rooms — male and female facilities — disabled facilities.
Workshop	The Clean Energy Precinct would provide dedicated workshop facilities to carry out welding, grinding, lubrication, sheet metal working, and electrical testing. The workshop would be approximately 50 metres x 100 metres. The workshop would feature a 10 t gantry crane to lift heavy goods and equipment and would provide access for a forklift truck. A small tool store would be incorporated into the workshop space. External to the workshop, there would be a dedicated lubricant storage bay, gas cylinder storage and air compressor. Adjacent to the workshop would also be a component wash bay. The workshop would have direct access to the laydown area by means of a roller door.
Warehouse	A dedicated warehouse/store would be provided for spares and stores that cannot be stored in the laydown area. The warehouse would feature racking and access by forklift truck and forklift battery charging bays. A fenced and secured storage area would be required within the warehouse for the storage of high value spares.

3 Legislative and policy context

3.1 Legislative context

3.1.1 Environmental Planning and Assessment Act 1979

This SIA scoping report has been prepared as part of PON's concept development application, made pursuant to Division 4.4 of the *Environmental Planning and Assessment Act 1979* (EP&A Act).

According to the EPA Act, a *concept development application* is a development application that sets out concept proposals for the development of a site, and for which detailed proposals for the site or for separate parts of the site are to be the subject of a subsequent development application or applications.

The project involves a Clean Energy Precinct Concept Plan and Stage 1 (lead-in infrastructure) and would be subject to subsequent development applications to carry out future stages of development.

3.2 Strategic planning and policy context

3.2.1 Australian government policy context

3.2.1.1 Integrated System Plan 2022

The Integrated System Plan 2022 (ISP) provides an integrated roadmap for the development of the National Electricity Market (NEM) over the next 20 years. The 2022 ISP outlines an optimal development path to support the power system's transformation from oil and gas to renewables, batteries and other forms of firming capacity by 2050.

The project is located in proximity to three of the proposed REZ's, the Central-West Orana REZ, New England REZ and the Hunter-Central Coast REZ. Connecting the project to one/multiple of these REZ's would support the build out of the REZ and facilitate renewable generation development to replace energy provided by retiring coal fired generators. Supporting the build out of the REZ's complements the energy transition and provides energy security and a pathway to decarbonisation of industry in the Hunter region.

3.2.2 NSW government policy context

3.2.2.1 Renewable Energy Zone access schemes

REZ access schemes are a key part of the NSW Government's work to coordinate and encourage investment in REZs and to realise objectives of the Electricity infrastructure Roadmap and its enabling legislation.

REZ access schemes will:

- govern the volume of projects that may be granted access rights to connect REZ scheme infrastructure
- enable investment in new, low-cost generation and storage projects by providing increased certainty
- create a streamlined connection process for projects.

The project would connect to one or more of the proximate REZ's and would support broader objectives of the REZ. The project would allow for low-cost renewable energy for the NEM.

3.2.3 Regional and Local strategic planning

3.2.3.1 Hunter Regional Plan 2036

The Hunter Regional Plan 2036 acknowledges the opportunities provided by natural resources and strong communities, and sets the following regionally focused goals:

- strong and dynamic regional economy
- healthy environment with pristine waterways
- strong infrastructure and transport networks for a connected future
- attractive and thriving communities.

3.2.3.2 Greater Newcastle Metropolitan Plan 2036

The Greater Newcastle Metropolitan Plan 2036 sets out strategies and actions to drive sustainable growth across Greater Newcastle and achieve the vision for the Hunter as a leading regional economy in Australia, with a vibrant new metropolitan city at its heart.

The strategies most relevant to the project include:

- **Strategy 15**: Plan for a Carbon Neutral Greater Newcastle by 2050. The clean energy produced as a result of the project will directly contribute towards this strategy and its overarching outcome of "enhance environment, amenity and resilience for quality of life".

3.2.3.3 Newcastle Community Strategic Plan: Newcastle 2040

Newcastle 2040 is a shared community vision, developed as a guide to inform policies and actions throughout the City of Newcastle over next 10 years and beyond. With direct input from a wide cross-section of the community, it outlines community values and four key priorities: sustainability, liveability, creativity and achieving together.

The priority most relevant to the project is sustainable Newcastle, Action 2.1.1 under this priority which reads: "achieve net zero emissions by increasing energy and waste efficiency and reducing emissions from buildings, transport, infrastructure, and supply chains. Encourage clean technology and future ready initiatives and industries."

3.2.3.4 Hunter Wetlands National Park Plan of Management

The primary management objectives of the Plan are to protect the internationally important wetlands and to provide for sustainable visitor use and enjoyment.

Desired outcomes outlined in the Plan include:

- Worimi and Awabakal Aboriginal communities are involved in management of the Aboriginal cultural values of the park so that impacts on heritage values are minimised and cultural values are better understood
- sensitive environments in the park are protected from further impacts
- impacts of pollution on air and water quality are reduced
- threatened plant species, populations and ecological communities are conserved and impacts are minimised
- impacts of acid sulfate soil on water quality and estuarine habitat are reduced.

3.3 Relevant guidelines

3.3.1 NSW DPE SIA Guideline 2021

The NSW DPE SIA Guideline requires all State Significant projects to have a clear and consistent approach to assessing social impacts. The Guideline provides a framework to identify, predict and evaluate likely social impacts and propose responses to them.

3.3.2 NSW DPE SIA Scoping worksheet

The NSW DPE SIA Scoping Worksheet (SIA Scoping Tool) is a decision support tool to assist in identifying and considering the likely social impacts of the project. This report used this tool to demonstrate how scoping has informed the recommended level of assessment to be undertaken at Phase 2 of the SIA.

4 Methodology

The methodology of this report was informed by the NSW DPE SIA Guidelines and Scoping Worksheet. As per the guideline, the scoping of social impacts considers and reflects the following SIA principles:

- Life-cycle focus: exploring the likely impacts at all project stages, including pre-construction, construction, and operation.
- Proportionate: ensuring the scope and scale of the SIA corresponds to the scope and scale of the likely social impacts.
- Material: focusing on those impacts that matter most for people and/or pose the greatest risk/opportunity to those expected to be affected.
- Integrated: using and referencing information from other assessments.

This section details the methodological steps conducted to complete this report.

4.1 Understanding the project context

The project context was informed by a review of legislative framework, regional and local strategic planning and policy context (as described Section 3).

4.2 Preliminary scoping of social impacts

The SIA Scoping Tool (DPE, 2021) has been completed to inform this SIA scoping report and determine the required assessment level for each social impact for the Phase 2 SIA. The SIA Scoping Tool was completed in an iterative process to inform this report. The initial scoping of likely social impacts was informed by:

- understanding the project and it's legislative and policy context
- review of assessment report of project of similar characteristics within PON (SSD-4986: Incitec Pivot Ammonium Nitrate Facility Kooragang Island)
- reviewing social research focused on hydrogen (see Appendix B).

The scoping of social impacts was further refined by:

- a desktop review of the existing environment and outcomes of preliminary assessments completed as part of the Scoping Report for the project
- a review of PON project related engagement activities (Section 7).

Scoped social impacts and their required level of assessment are outlined in Section 8, and the SIA Scoping Tool can be found in Appendix A.

4.3 Determining the social locality and describing the existing environment

The social locality is the geographical areas in which direct and indirect impacts (positive and negative) are likely to occur. The social locality has been determined by considering stakeholders most likely to experience direct and indirect socio-economic impacts, and their geographic location (Section 5).

The social locality considers Australian Bureau of Statistics (ABS) statistical geography boundaries, including ABS Suburbs and Localities (SALs), and Urban Centres and Localities (UCLs) that intercept and surround the proposal. The social locality is the area expected to experience the most social change due to the proposal.

An overview of the local and regional localities surrounding the project is provided in Section 1. It includes quantitative (ABS data) and qualitative indicators to describe current and future demographic and economic trends in the existing environment.

4.4 Proposed approach to undertake a Phase 2 SIA

Following completion of the SIA Scoping Tool, the overall complexity of the SIA assessment was reviewed against the criteria outlined in Table 4.1. The level of assessment required for the Phase 2 SIA is described in Section 10.

The criteria adopted is informed by Appendix C of the Technical Supplement of SIA Guideline (DPE, 2021) and by the SIA Guideline.

Table 4.1 Level of assessment criteria

Complexity of SIA Report	Level of assessment	Criteria
Complex	Detailed	The project may result in significant social impacts, including cumulative impacts
	Standard	The project is unlikely to result in significant social impacts, including cumulative impacts
Basic	Minor	The project may result in minor social impacts
	Not relevant	The project will have no social impact, or the social impacts of the project will be so small that they do not warrant consideration

4.5 SIA team and lead author

This SIA scoping report was developed by an experienced team of social scientists. Ali Mollinger-Sahba is the lead author of this report. Ali holds a PhD on the topic of social impact investment from the University of Western Australia Business School. Ali is a social performance specialist with 15 years' experience across the public, private and not-for-profit sectors in Canberra, New South Wales, the Northern Territory and Western Australia. Ali is a member of the International Association of Impact Assessment and the Australian Evaluation Society.

Carla Martinez is technical reviewer of this report. Carla Martinez holds a Master of Development Practice major in Planning for Social Development from the University of Queensland. Carla has also completed an SIA course from the University of Strathclyde and has experience in the resource and energy sector in Chile and Australia and has led SIAs in NSW, Queensland and South Australia. Carla Martinez is a member of the Environmental Institute of Australia and New Zealand and an Industry Fellow of the Centre for Social Responsibility in Mining from The University of Queensland.

5 Social locality

This section identifies the geographical areas in which direct and indirect impacts (positive and negative) are likely to occur (see Figure 5.1).

The social locality consists of:

- Newcastle Statistical Area Level 3 (SAL3) (referred in this report as Newcastle), which includes the following suburbs within approximately 5km of the project site: Warabrook, Sandgate, Mayfield West, Mayfield North, Mayfield East, Mayfield, Tighes Hill, Maryville, Islington, Hamilton North, Carrington, Georgetown, Waratah, Waratah West, Callaghan and North Lambton.
- Tomago Urban Centre and Localities (UCL) (referred in this report as Tomago), which includes a section of the Hunter Wetlands to the north of the project.

Data from the State of NSW is provided as a way of comparison.

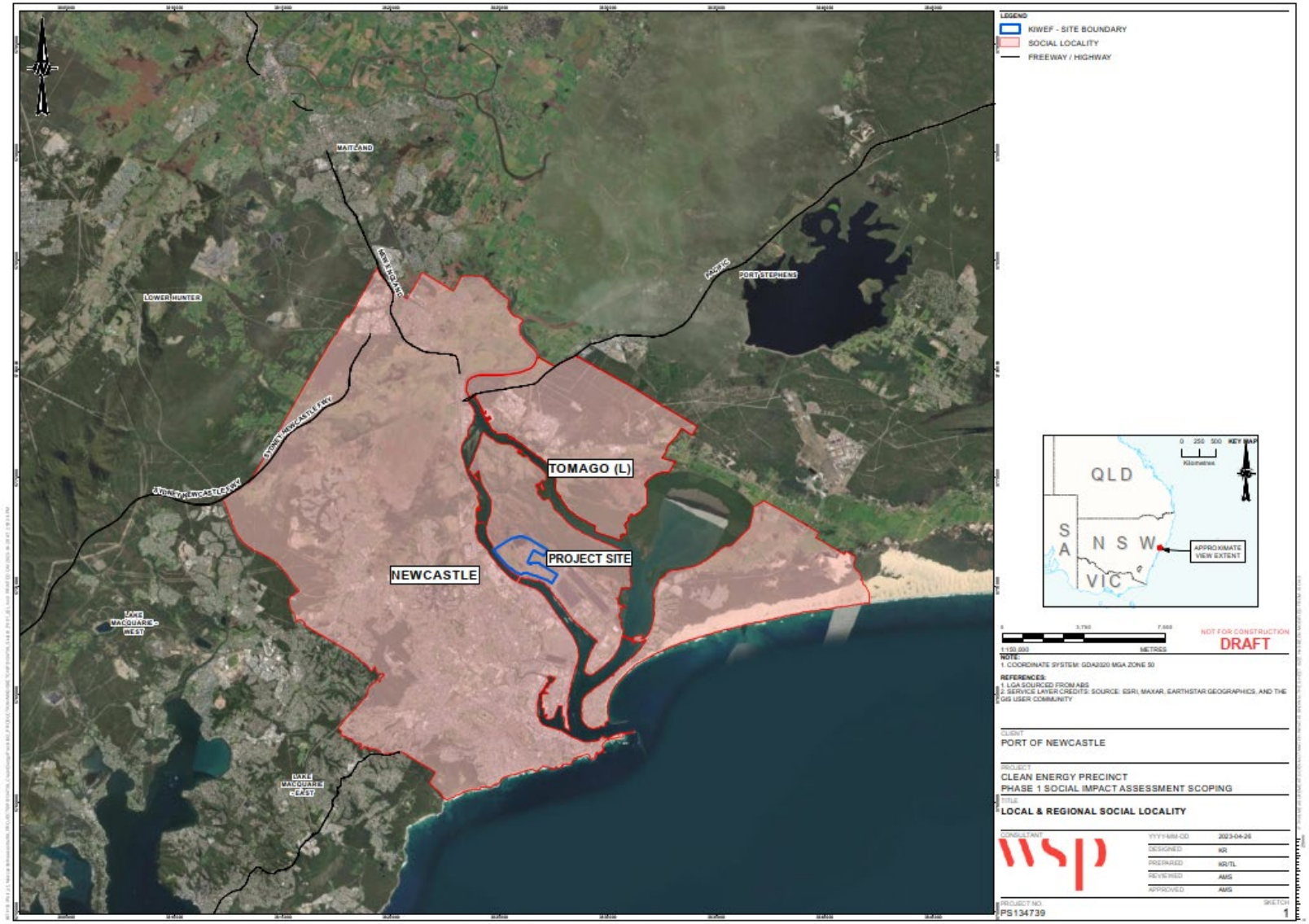

Figure 5.1 Map of the social locality

6 Existing environment

The project is located within the regional city of Newcastle in NSW. The site is located on the former KIWEF site. Existing land uses of the project site and surrounds is predominately industrial, shipping and port operations. The project site is bounded by Ramsar wetlands to the north and west, Hunter River South Channel to the south and the Newcastle Coal Infrastructure Group (NCIG) terminal is directly east of the site. This NCIG terminal receives inbound coal, which is stacked in the stockyard prior to exportation.

The site was previously used by BHP Newcastle Steelworks as a landfill site from the late 1960's up to 1999 when BHP ceased operations. There has been capping and related environmental improvement works at the site to close the landfill. On the opposite bank of the Hunter River South Channel, approximately 340 metres south of the site, the land is primarily zoned IN1 – General Industrial and comprises local industrial businesses such as Benedict Recycling Plant and multiple warehouses. The nearest residential receiver is approximately 870 metres southwest of the site on Maitland Road.

Several residential suburbs surround the project site including Stockton, located approximately five km east from the project site (across the Hunter River), Tighes Hill, Carrington, Mayfield and Mayfield East situated approximately 1.5–2 km south of the project site across the Hunter River.

6.1 Demographic overview

The social locality has a total resident population of 179,269 people. Family structures within Newcastle showed an even distribution of couple families with children (40%) and a couple families without children (40.70%). The median weekly household income of $1,740 is similar to the State median of $1,746, while the unemployment rate of 4.9% is slightly lower than the State rate.

The demographics for the sparsely populated Tomago differ greatly from Newcastle across several indicators. For example, only 14.3% of families in Tomago have children, and the average age of residents is 60 years old, compared to 37 years old in Newcastle. Given the small resident population of Tomago (269 people), the suburb represents around 0.1% of the social locality's population, and consequently has minor impact on the overall demographic breakdown of the region.

Table 6.1 Demographic overview of the social localities

Indicator	Social locality			State
	Newcastle SAL	Tomago UCL	Total	New South Wales
Population				
All people	179,000	269	179,269	8,072,161
Male	87,900	174	88,074	3,984,166
Female	91,097	101	91,198	4,087,995
Families				
Couple family without children	40.70%	48.20%	18,606	37.90%
Couple family with children	40%	14.30%	18,259	44.70%
One parent family	17.30%	33.90%	7,925	15.80%
Median age	37	60		39

Source: 2021 ABS Census

Although the social locality has a relatively greater proportion of Aboriginal and Torres Strait Islander residents (4.6% in Newcastle and 8.9% in Tomago, as against 3.4% in New South Wales), it is generally less culturally and linguistically diverse than both New South Wales and Australia. Only 12.1% of households in Newcastle and 4.7% in Tomago speak a language other than English at home. This contrasts with 29.5% of households at State level speaking a language other than English at home. Mandarin and Macedonian are the top languages other than English spoken in Newcastle, whilst in Tomago, 1.9% of households speak Thai.

Table 6.2 Cultural and linguistic diversity of the social localities

Indicator	Social locality		State
	Newcastle SAL	Tomago UCL	New South Wales
Aboriginal or Torres Strait Islander peoples	4.6%	8.9%	3.4%
Households where a non-English language is spoken	12.10%	4.7%	29.5%

Source: 2021 ABS Census

6.2 Education

Educational attainment in Newcastle is commensurate with the attainment rates for NSW more generally and is marginally higher in relation to the proportion of people with a Bachelor degree level and above (27.7% as against the State rate of 27.8%), as well as for those with a Certificate Level IV and III. Tomago however has a significantly lower rate of residents with a Bachelor degree level and above, at 3.20%.

Table 6.3 Education in the social localities

Indicator	Social locality			State
	Newcastle SAL	Tomago UCL	Total	New South Wales
Bachelor degree level and above	27.70%	3.20%	41,488	27.80%
Advanced Diploma and Diploma Level	8.80%	5.3%	13,213	9.30%
Certificate Level IV	4.20%	None	6,306	3.30%
Certificate Level III	13.2%	13.00%	19,715	11.70%
Year 12	14.10%	8.90%	21,086	14.50%
Year 10	11.00%	16.60%	16,538	10.60%

Source: 2021 ABS Census

6.3 Health

People in the social locality suffer from higher rates of long-term health conditions than those in NSW more generally. Only 55.90% of people in the Newcastle SAL and 36.10% of people in Tomago report having no long-term health conditions, compared to 61.00% across the state. Mental health conditions are particularly prevalent, with 12.4% of people suffering from a mental health condition in Newcastle. In Tomago, asthma is one of the most prevalent conditions.

Table 6.4 Long-term health conditions in the social localities

Indicator	Social locality			State
	Newcastle SAL	Tomago UCL	Total	New South Wales
Asthma	9.60%	12.30%	17,273	7.80%
Cancer (including remission)	3.00%	5.20%	5,362	2.80%
Lung condition	2.00%	3.00%	3,511	1.70%
Mental health condition	12.40%	11.90%	22,297	8.00%
Any other long term health condition	8.90%	8.60%	15,897	0.90%
No long-term health condition stated	55.90%	36.10%	100,233	61.00%

Source: 2021 ABS Census

6.4 Economy

6.4.1 Key employment industries and occupations

Newcastle is famous for its coal and steel industries, and the Port of Newcastle is the largest coal exporting harbour in the world, exporting 159.9 million tonnes of coal in 2017. Global demand for Australian coal has dipped slightly in recent years, and new figures reveal the demand for diversified trade including wheat, fertiliser, steel, cement, fuels, project cargo and aluminium (Port of Newcastle, 2022).

However, the top occupations in the social locality highlight its reputation as an economy based on heavy industries including coal and steel. With the closure of the BHP steelworks in 1999, after 84 years of operation, Newcastle experienced a significant amount of economic diversification which has strengthened the local economy. Professionals make up 28.7% of the workforce in Newcastle, followed by community and personal service workers at 13.4%. The proportion of professionals and community service workers is higher than both the state and national rates.

Neither the coal industry nor any of the industries associated with its production and transport appear in the list of top industries for Newcastle. Tomago has a high proportion of residents (9.9%) working in the road transport industry.

Table 6.5 Top employment industries in the social localities

Indicator	Social locality		State
	Newcastle SAL	Tomago UCL	New South Wales
Hospitals (except psychiatric)	6.50%		4.20%
Other social assistance services	4.20%	9.90%	2.40%
Higher Education	2.50%		1.30%
Road Freight Transport		9.9%	
Accommodation		4.2%	

6.4.2 Port of Newcastle activities

Whilst PON activities are not reflected in the top industries and occupations for Newcastle SA3, its operation is nevertheless integral to the economic life and future of the region. The Port of Newcastle operates within an industrial precinct surrounded predominantly by other businesses complementary to port operations.

PON currently operates 20 berths and has total land holdings of 792 ha, including 200 ha of vacant Port of Newcastle land (PON, 2022). The port currently handles 4,697 ship movements and 166 million tonnes of cargo annually, and with a deep-water shipping channel operating at 50% of its capacity, significant port land available and access to national rail and road infrastructure.

Key risks and hazards within the existing environment include:

- storage and transport of dangerous goods and hazardous materials
- biosecurity risks
- traffic and transport on existing roads
- port and shipping operations.

7 Stakeholder engagement

The PON have identified relevant stakeholders who are affected by or have an interest or influence in the project and has developed communications materials and engagement channels to build knowledge about the project and allow an opportunity for feedback.

Recognising that the Hunter region has a strong history and collective knowledge of the energy resources sector, a key component to PON engagement on this project has been to engage with stakeholders and the community during early stages of development. The initial Green Hydrogen Hub concept provided opportunity for industry and community input at the feasibility stage. This engagement has been critical to informing the current concept of the Clean Energy Precinct. This has also allowed the PON to start an ongoing dialogue that:

- increases general awareness of energy diversification in the Newcastle and Hunter region, nationally and internationally
- increases awareness of the public and economic benefits and opportunities that can be realised across the project lifecycle
- begins to position stakeholders and the community with background knowledge that would ensure well-informed feedback is received in future phases, especially the formal exhibition period.

Communications materials and engagement channels have been used to build knowledge about the project and allow an opportunity for consistent dialogue, should that be desired by stakeholders and the community. Early engagement has focussed on increasing awareness of the opportunities and benefits that energy diversification can bring to Newcastle and the Hunter region through the PON, including its unique characteristics and benefits for Australia's diversified trade. Appropriate communication channels have been used to inform stakeholders of the shifts in the nature of the project, including:

- project webpage
- project email
- briefings
- letters and emails
- networking events and presentations
- letterbox drop
- social media
- video
- media and paid advertising and editorials
- site tours.

There have been three key phases to the Communications and Engagement Strategy to-date:

1. extensive local, regional, state and national coverage of the announcement of the concept of a Green Hydrogen Hub and subsequent feasibility study as it relates to commonwealth and state net zero policies and clean energy plans
2. reporting back to stakeholders on the outcomes of the feasibility study for the Green Hydrogen Hub and its impact on the advancement of a common user Clean Energy Precinct for all forms of energy and future fuel beyond hydrogen
3. undertaking engagement with new stakeholders for the project (currently underway).

The PON has identified an extensive list of relevant key stakeholders who are affected by or have an interest or influence on the project. PON is maintaining a comprehensive Stakeholder List which currently contains 604 engaged stakeholders (as at 3 March 2023). This would be a primary database that would grow as the project develops and would be used as a central database for communications across future stages.

PON recognises the importance of continued engagement with stakeholders and the community and are committed to providing opportunities for all parties to provide feedback throughout the planning and operation phases. PON acknowledges that, it is through this feedback, better outcomes can be realised.

Prior to lodging, PON is engaging regularly in key stakeholder briefings with an identified list of critical industry stakeholders. These include:

- port tenants and rail, transport and logistics providers (e.g. Australian Rail and Track Corporation, Port Waratah Coal Services, Newcastle Coal Infrastructure Group)
- regional hydrogen hub proponents (e.g. Orica, Energy Estate)
- key government departments and agencies (e.g. HCCDC, Safework NSW, NSW Port Authority, Transport for NSW
- utility providers (e.g. Ausgrid, Transgrid, Hunter Water)
- vocational and tertiary education providers (e.g. University of Newcastle, TAFENSW, Training Services NSW).

At the time of lodging this Scoping Report, PON also has the following future engagement activities confirmed, but not yet undertaken:

- a project briefing for members of the Hunter Region Joint Organisation of Councils
- a briefing for new members to the PON Community Liaison Group, noting current members who are reappointed and have previously received information would also be present (first meeting of the new Group expected to be held 17 April 2023)
- a briefing to the NSW Environment Protection Authority (as the Lead agency of the Environment Services Functional Area under the State Emergency Management Plan) and the Energy and Utility Management Unit in the Department of Planning and Environment (as the Coordinating Authority for the Energy and Utility Services Functional Area under the State Emergency Management Plan), noting the important role that these agencies play in preventing, preparing, responding and recovering from environmental hazards.

8 Scoped social impacts

This section identifies the potential impacts and benefits of the project. Table 8.1 lists the potential benefits of the Project and Table 8.2 lists the potential negative impacts.

8.1 Benefits

Table 8.1 identifies the project activities that would likely result in socio-economic benefits during construction and operations, the extent of the benefit and level of assessment required.

Table 8.1 Scoping of potential social benefits

Primary Impact Category	Project activity	Potential impacts on people	Who is likely to benefit	Phase	Level of Assessment
Livelihoods	Construction and operation of ancillary and lead-in infrastructure, storage facilities and infrastructure corridor	Enhanced livelihoods resulting from employment opportunities	Newcastle and Hunter Valley workforce	Construction and operation	Detailed
Livelihoods	Construction and operation of ancillary and lead-in infrastructure, storage facilities and infrastructure corridor	Positive direct and indirect economic opportunities for local and regional businesses	Businesses in Newcastle and Hunter Valley	Construction and operation	Detailed

8.2 Impacts

Table 8.2 identifies the project activities that would likely result in socio-economic negative impacts during construction, and operations, their extent and level of assessment required.

Table 8.2 Scoping of potential social impacts

Primary Impact Category	Project activity	Potential impacts on people	Who is likely to benefit	Phase	Level of Assessment
Way of life	Transport of workers and materials to and from the project site	Increased traffic impacting how people experience their daily routines, travel and sense of road safety	Commuters and other road users	Construction and operation	Standard
Health and wellbeing	Storage of ammonia	Anxiety and stress due to risks associated with ammonia storage, such as exposure to gas, odour and respiratory injuries	People who work and live within an exposure radius	Operation	Detailed

Primary Impact Category	Project activity	Potential impacts on people	Who is likely to benefit	Phase	Level of Assessment
Health and wellbeing	Storage of ammonia	Cumulative exposure risks causing hazards for workers and nearby residents	People who work and live within an exposure radius	Operation	Detailed
Culture	Construction and operation activities which occur on or close proximity to wetlands and/or impact threatened species	Diminished environmental values	Local residents who value the wetlands and their unique flora and fauna	Construction and operation	Detailed
Culture	Construction and operation activities which occur on or close proximity to wetlands and/or impact threatened species	Diminished Aboriginal cultural values	Worimi and Awabakal Aboriginal communities	Construction and operation	Detailed
Surroundings	Construction and operation of ancillary and lead-in infrastructure, storage facilities and infrastructure corridor	Diminished aesthetic values due to the construction of new infrastructure	Local residents and visitors within eyesight of the project	Construction and operation	Detailed
Decision Making	Project approvals	Diminished sense of control over aspects that may impact people's lives	Local residents and Aboriginal groups within the social locality	Pre-construction	Detailed

9 Recommendations

Table 9.1 provides early recommendations to maximise benefits and to avoid, minimise or mitigate negative impacts identified.

Table 9.1 Recommendations

Ref	Preliminary measures	Summary
SI1	Local and Regional employment strategy	It is recommended that the PON develops a local and regional employment strategy to promote employment opportunities locally. The employment strategy may include engagement with TAFEs and Council to inform about skills requirements for future employment opportunities resulting from the project and schedule.
SI2	Industry participation strategy	It is recommended that the project proponent develops an industry participation strategy to promote the engagement of local and regional suppliers with the project. It is recommended that the project proponent continues to engage with the relevant industry bodies to inform about future procurement needs of the project and estimated schedule.
SI3	Communication and Engagement Strategy and implementation plan for EIS	It is recommended that the Communication and Engagement Strategy currently being developed by PON includes the following: — engagement with Traditional Owners to identify and assess the Aboriginal heritage and cultural values of the area that may be directly or indirectly impacted by the project, and identification of mitigation measures if needed — engagement with key stakeholders such as Council, PON Community Liaison Group, local residents, and local services to better understand, assess and address issues such as: — concerns related to hazards and risks to health and wellbeing — community values of residents and visitors (environmental, and aesthetic) — amenity and traffic impacts during construction — sites of natural and historical heritage significance — discuss the proposed management, monitoring and mitigation to prevent social impacts as a result of implementing the project — promotion of information to help inform an understanding of project and future phases of development — proactively share safety considerations associated with the project.

10 Complexity of SIA Phase 2

To further understand the magnitude and likelihood of the impacts and benefits identified in this SIA scoping report, a complex Phase 2 SIA will be required in accordance with the NSW DPE SIA Guideline.

The key objectives of the SIA Phase 2 report would be to:

- predict and analyse the extent and nature of likely social impacts against baseline conditions using accepted social science methods
- evaluate, draw attention to and prioritise the social impacts that are important to people
- develop appropriate and justified responses (e.g., avoidance, mitigation and enhancement measures) to social impacts, and identify and explain residual social impacts
- propose arrangements to monitor and manage residual social impacts, including unanticipated impacts, over the life of the project (DPE, 2021).

10.1 Consultation and research methods

The Phase 2 SIA will be informed by the following primary and secondary research methods and consultation activities:

- Primary SIA data will be collected through the following activities:
  - targeted consultation via a local resident and key stakeholders survey. The survey will be distributed online to residents within 5 km of distance to the project
  - targeted consultation via individual and group semi-structured interviews, with key stakeholder groups including:
    - residents in close proximity to the project
    - local government representatives
    - community representatives
    - First Nations people
    - social service providers (including emergency services)
    - institutional and industry stakeholders (such as chambers of commerce).
- Secondary SIA data will be collected through reviews and analysis of the following:
  - broad consultation findings from EIS engagement activities lead by PON
  - targeted consultation findings from engagement activities undertaken by specialists to inform technical reports that support the EIS, such as Aboriginal cultural heritage assessment
  - secondary sources of information, including relevant census and demographic data from the ABS
  - regional and local strategic plans, as well as SIA reports prepared for other projects in the local area.

11 Limitations

This Report is provided by WSP Australia Pty Ltd (WSP) for the Port of Newcastle (Client) in response to specific instructions from the Client and in accordance with WSP's proposal and agreement with the Client (Agreement).

SIA limitations

The information presented in this report has been based on desktop research. At the time of writing of this report, 2021 Census data had been partially released. While this report has considered the 2021 Census data released to date, the comprehensive list of indicators is yet to be updated and released.

Detailed investigations, including consultation and/or surveys, are proposed be undertaken during the preparation of the EIS for the project.

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Appendix A

Scoping of potential impacts

Social Impact Assessment (SIA) Worksheet

Project name: Stage 1 Concept Design Clearn Energy Precint

Date: 02/03/2023

PROJECT ACTIVITIES	CATEGORIES OF SOCIAL IMPACTS	POTENTIAL IMPACTS ON PEOPLE		PREVIOUS INVESTIGATION OF IMPACT		CUMULATIVE IMPACTS	ELEMENTS OF IMPACTS - Based on preliminary investigation					ASSESSMENT LEVEL FOR EACH IMPACT				PROJECT REFINEMENT	MITIGATION / ENHANCEMENT MEASURES
Which **project activity / activities** could produce social impacts ?	what **social impact categories** could be affected by the project activities	What impacts are likely, and what concerns/aspirations have people expressed about the impact? Summarise how each relevant stakeholder group might experience the impact. NB. Where there are multiple stakeholder groups affected differently by an impact, or more than one impact from the activity, please add an additional row.	Is the impact expected to be **positive or negative**	Has this impact previously been investigated (on this or other project/s)?	If "yes - this project," briefly describe the previous investigation. If "yes - other project," identify the other project and investigation	Will this impact combine with others from this project (think about when and where), and/or with impacts from other projects (cumulative)?	If yes, identify which other impacts and/or projects	Will the project activity (without mitigation or enhancement) cause a material social impact in terms of its: You can also consider the various magnitudes of these characteristics					Level of assessment for each social impact	What methods and data sources will be used to investigate this impact?			Has the project been refined in response to preliminary impact evaluation or stakeholder feedback?	What **mitigation / enhancement measures** are being considered?
								extent i.e. number of people potentially affected?	**duration** of expected impacts? (**i.e. construction vs operational phase**)	**intensity** of expected impacts i.e. scale or degree of change?	**sensitivity** or vulnerability of people potentially affected?	**level of concern/interest** of people potentially affected?		Secondary data	Primary Data - Consultation	Primary Data - Research		
Transport of people and materials to and from the project site	Way of life	Increased traffic impacting how people experience their daily routines, travel and sense of road safety	Negative	Yes - other project	There existing traffic reports near the Project site that inform other projects within Port of Newcastle	Yes	Potential to use routes already in use by Port of Newcastle operations	Yes	No	No	No	Unknown	Standard assessment of the impact	Required	Targeted consultation	Potentially targeted research	To be completed with PON feedback	Engage with key stakeholders such as Council, PON Liaison Group, local residents, and local services to better understand, assess and address issues such as:
Storage of ammonia	Health and wellbeing	Anxiety and stress due to risks associated with ammonia storage, such as exposure to gas, odour and respiratory injuries.	Negative	Yes - other project	There is currently Amonia storage and production within Port of New Castle	No	Not required	Yes	Yes	Unknown	Unknown	Unknown	Detailed assessment of the impact	Required	Broad consultation	Targeted research	To be completed with PON feedback	Engage with key stakeholders such as Council, PON Liaison Group, local residents, and local services to better understand, assess and address concerns related to hazards and risks to health. Promote an understanding of the project and future phases of development Proactively share safety considerations associated with the project.
Storage of ammonia	Health and wellbeing	Cumulative exposure risks causing hazards for workers and nearby residents	Negative	Yes - other project	There is currently Amonia storage and production within Port of New Castle	Yes	Potential to combine with other activities within Port of Newcastle	Yes	Yes	Unknown	Unknown	Unknown	Detailed assessment of the impact	Required	Broad consultation	Targeted research	To be completed with PON feedback	Engage with key stakeholders such as Council, PON Liaison Group, local residents, and local services to better understand, assess and address concerns related to hazards and risks to health. Promote an understanding of the project and future phases of development Proactively share safety considerations associated with the project.
Construction and operation activities which occur on or close proximity to wetland and/or impact threatened	Culture	Diminished environmental values	Negative	Yes - other project	Hunter Wetlands National Park Plan of Management	Yes	Potential to combine with other activities within Port of Newcastle	Yes	Yes	No	No	Unknown	Detailed assessment of the impact	Required	Broad consultation	Targeted research	To be completed with PON feedback	Engage with key stakeholders such as Council, PON Liaison Group, local residents, and local services to better understand, assess and address issues such as: —community values of residents and visitors (environmental, and aesthetic) —sites of natural and historical heritage significance
Construction and operation activities which occur on or close proximity to wetland and/or impact threatened species	Culture	Diminished Aboriginal cultural values	Negative	Yes - other project	Hunter Wetlands National Park Plan of Management	Yes	Potential to combine with other activities within Port of Newcastle	Yes	Yes	Unknown	Yes	Unknown	Detailed assessment of the impact	Required	Broad consultation	Targeted research	To be completed with PON feedback	Engage with Traditional Owners to identify and assess the Aboriginal heritage and cultural values of the area that may be directly or indirectly impacted by the project, and identify mitigations if needed
Construction and operation of ancillary and lead-in infrastructure, storage facilities and infrastructure corridor	Surroundings	Diminished aesthetic values resulting from construction of new infrastructure	Negative	Yes - other project	Port of Newcastle operational projects	Yes	Potential to combine with existing infrastructure/ new projects within Port of Newcastle	Yes	Yes	No	No	No	Detailed assessment of the impact	Required	Broad consultation	Targeted research	To be completed with PON feedback	Engage with key stakeholders such as Council, PON Liaison Group, local residents, and local services to better understand, assess and address issues such as: —community values of residents and visitors (environmental, and aesthetic) —sites of natural and historical heritage significance —discuss the proposed management, monitoring and mitigation to prevent social impacts as a result of implementing the project
Project approvals, constr	Decision Making	Diminished sense of control over aspects that may impact people's live	Negative	Yes - other project	Port of Newcastle operational projects	Yes	Potential to combine with existing infrastructure / new projects within Port of Newcastle	Yes	Yes	Unknown	Unknown	Yes	Detailed assessment of the impact	Required	Broad consultation	Targeted research	To be completed with PON feedback	It is recommended that the Communication and Engagement Strategy that PON is currently developing includes the following: —engage with Traditional Owners to identify and assess the Aboriginal heritage and cultural values of the area that may be directly or indirectly impacted by the project, and identify mitigations if needed —engage with key stakeholders such as Council, PON Liaison Group, local residents, and local services to better understand, assess and address issues such as:
Construction and operation of ancillary and lead-in infrastructure, storage facilities and infrastructure corridor	Livelihoods	Enhanced livelihoods resulting from employment opportunities	Positive	Yes - other project	Port of Newcastle operational projects	Yes	Potential to combine with existing infrastructure / new projects within Port of Newcastle	Yes	Yes	Unknown	Yes	Yes	Detailed assessment of the impact	Required	Broad consultation	Targeted research	To be completed with PON feedback	It is recommended that the PON develops a local and regional employment strategy to promote employment opportunities realise locally. The employment strategy might include engaging with TAFEs and Council to inform about skills requirements for future employment opportunities resulting from the project and schedule.
Construction and operation of ancillary and lead-in infrastructure, storage facilities and infrastructure corridor	Livelihoods	Positive direct and indirect economic effects to local and regional businesses	Positive	Yes - other project	Port of Newcastle operational projects	Yes	Potential to combine with existing infrastructure / new projects within Port of Newcastle	Yes	Yes	Yes	No	Yes	Detailed assessment of the impact	Required	Broad consultation	Targeted research	To be completed with PON feedback	It is recommended that the project proponent develops an industry participation strategy to promote the engagement of local and regional suppliers with the project. It is recommended that the project proponent continues to engage with the relevant industry bodies to inform about future procurement needs of the project and estimated schedule.

Appendix B

Social research summary

B1 Social research summary

B1.1 The Australian public's perception of hydrogen for energy

Research undertaken at the University of Queensland in 2018 showed that amongst the general public there is little knowledge regarding hydrogen development, which can lead to a perceived fear of the unknown for some people. Public safety, risk of explosion or fire, and water usage impacts on surrounding industries were the key concerns raised in that study.

In addition, the results of this research demonstrated that the Australian public are supportive of the opportunities that are emerging from a potential hydrogen industry. Many felt that there are a number of opportunities for hydrogen projects to be developed in regional Australia, with hydrogen eventually being made available to local consumers as long as it was cost competitive with conventional technologies. However, use and the management of Australia's valuable water resources and any associated land use change were also deemed critical for community support.

The research recommended:

- ongoing engagement with all stakeholders around emerging hydrogen trials and new projects
- ensuring communication materials do not assume any prior knowledge of hydrogen
- proactively sharing safety considerations in public engagement activities and communication materials
- a coordinated approach between government, industry and academia which aims to bring the public along with the developments occurring in the hydrogen space
- raising awareness of the benefits and opportunities presented to Australia by developing a hydrogen industry.

B1.2 Social science for a hydrogen energy future

This research conducted by CSIRO (2019) concluded that perceptions of environmental benefit, safety and costs are leading influences on attitudes, acceptance and adoption, and attitudes from a base of low awareness are liable to change, which could result in reputational risks and opportunities for hydrogen energy in Australia.

The research anticipated that the public could have a generally positive attitude towards hydrogen energy. However, the level of awareness of the technology is currently low, and social science research has shown that attitudes formed with low awareness are liable to change. This could pose both risks and opportunities for the reputation of hydrogen energy technologies in Australia. For example, it is known that a negative event early in a technologies introduction can cause public opposition, even when the technology has recognisable benefits. Additionally, considerable growth in understanding may be required to move beyond attitudes based on concerns.

The main influences on future acceptance and adoption of hydrogen energy were found to be perceptions of environmental benefit, especially in regard to renewable versus non-renewable hydrogen production; safety and cost. As communicated by interviewees from industry and government, risks can also arise early, from under-informed attitudes. Early, effective communication is therefore imperative to increase awareness and understanding of hydrogen energy. In the telling words of one interviewee: "If the public perception is poor, it doesn't matter how good hydrogen is. Perception is reality."

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