GOVERNMENT OF WESTERN AUSTRALIA

Environmental Protection Authority

Ammonia Expansion Project

CSBP Limited

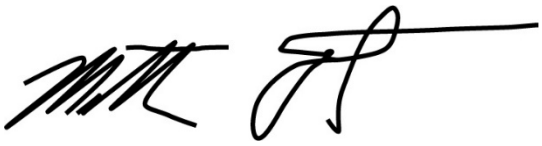
Report 1753

November 2023

This assessment report has been prepared by the Environmental Protection Authority (EPA) under s. 44 of the *Environmental Protection Act 1986* (WA). It describes the outcomes of the EPA's assessment of the Ammonia Expansion Project proposal by CSBP Limited.

This assessment report is for the Western Australian Minister for Environment and sets out:

- what the EPA considers to be the key environmental factors identified in the course of the assessment
- the EPA's recommendations as to whether or not the proposal may be implemented and, if it recommends that implementation be allowed, the conditions and procedures, if any, to which implementation should be subject
- other information, advice and recommendations as the EPA thinks fit.



Prof. Matthew Tonts
Chair
Environmental Protection Authority

10 November 2023

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Contents

Figures

Tables

Appendices

Summary

Proposal

The Ammonia Expansion Project is a proposal to construct and operate a new ammonia plant (Ammonia Plant 3 or AP3) within CSBP Limited's Kwinana Industrial Complex (CSBP Kwinana). CSBP Kwinana is located in the Kwinana Industrial Area (KIA) approximately 40 kilometres (km) south of Perth in Western Australia (WA).

The proponent for the proposal is CSBP Limited. The proposal will use natural gas sourced from the Dampier to Bunbury Natural Gas Pipeline (DBNGP), integrated with hydrogen production from a 10 megawatt (MW) electrolyser to manufacture ammonia for use by CSBP to manufacture other chemical products or sold externally to customers. The proposal comprises a self-sustained facility with a production capacity of approximately 300,000 tonnes per annum (tpa).

The proposal involves the clearing of less than one hectare of regrowth native vegetation within a 27.52 hectare (ha) development envelope.

Context and Environmental values

CSBP commenced the manufacture and handling of ammonia at CSBP Kwinana in 1967 following the construction of Ammonia Plant 1 (AP1). CSBP Kwinana currently handles approximately 525,000 tpa or 525 thousand tonnes per annum (ktpa) of ammonia for the manufacture of ammonium nitrate, fertiliser and sodium cyanide for sale to external customers. CSBP currently operates a single train ammonia plant (AP2), which manufactures half of the ammonia requirements. The remaining ammonia requirements of approximately 260 ktpa are imported from external sources via bulk shipments through Fremantle Ports to Kwinana Bulk Jetty (KBJ). The imported ammonia is unloaded at KBJ and transferred to storage tanks at CSBP Kwinana via a dedicated pipeline.

Greenhouse gas (GHG) emissions is the key environmental factor that may be impacted by the proposal. The EPA has considered potential impacts to other environmental factors such as flora and vegetation, marine environmental quality, air quality and social surroundings in Appendix D.

Consultation

The EPA published the proponent's referral information for the proposal on its website for seven days public comment from 8 February 2023 to 14 February 2023. The EPA considered the comments received during this public comment period in its assessment.

Assessment of key environmental factors

The EPA has assessed the key environmental factors and values (listed below) for consistency with the EPA environmental factor objectives.

Environmental factor	Residual impact on key value	Assessment finding/ environmental outcome
Greenhouse gas emissions	Scope 1 greenhouse gas (GHG) emissions of 539,003 CO_2-e tonnes per annum (tpa) exceed the 100,000 t CO_2-e per annum threshold. GHG emissions contribute to climate change, which impacts on WA's environment.	The information provided by the proponent indicates that management is required to minimise GHG emissions and to ensure there are no residual impacts from GHG emissions. The environmental outcome for GHG emissions is likely to be consistent with the EPA objective for the factor, subject to key environmental conditions, including Condition B1 'Greenhouse Gas Emissions' which requires: • a reduction in GHG emissions through the life of the project to net zero • implementation and review of the GHG EMP • public reporting of GHG emissions and reductions • preparation of a summary of the relevant plan. In addition, the EPA had regard to regulation by other decision-making authorities, specifically Part V of the *Environmental Protection Act 1986* which can apply regulatory conditions under a works approval and/or licence to include design and operation specifications to limit emissions to air. The environmental outcome for GHG emissions is likely to be consistent with the EPA objective for this factor.

Units and abbreviations
CO_2-e – carbon dioxide equivalent

Holistic assessment

The EPA considered the connections and interactions between relevant environmental factors and values to inform a holistic view of impacts to the whole environment. The EPA formed the view that the holistic impacts would not alter the EPA's conclusions about consistency with the EPA factor objectives.

Conclusion and recommendations

The EPA has taken the following into account in its assessment of the proposal:

- Environmental values which may be significantly affected by the proposal.
- Residual impacts, emissions and effects in relation to the key environmental factor, separately and holistically (this has included considering cumulative impacts of GHG emissions).
- Likely environmental outcomes which can be achieved with the imposition of recommended conditions.
- The consistency of these outcomes with the EPA objective for the key environmental factor.
- The EPA's confidence in the proponent's proposed mitigation measures.
- Whether other statutory decision-making processes can mitigate the potential impacts of the proposal on the environment.
- Principles of the *Environmental Protection Act 1986* (EP Act).

The EPA has recommended that the proposal may be implemented subject to conditions recommended in Appendix A.

1 Proposal

The Ammonia Expansion Project is a proposal to construct and operate a new ammonia plant (Ammonia Plant 3 or AP3) within CSBP Limited's (CSBP) Kwinana Industrial Complex (CSBP Kwinana) in the Kwinana Industrial Area (KIA). The proposal is located within the suburb of Kwinana, approximately 40 kilometres (km) south of Perth, in Western Australia (Figure 1). The proponent for the proposal is CSBP Limited.

AP3 is proposed to start up and operate independently from other existing facilities at CSBP Kwinana. Some utilities and services for the new plant will be connected with other facilities located at the KIA and this is typical for the industrial ecology of the KIA. AP3 will be located directly north of AP2 and west of the existing ammonium nitrate dome shelter storage, which will be relocated to the east to facilitate the proposal. The development envelope and disturbance footprint are shown in Figure 2. The area north of AP3 will be used during construction for access, laydown and car parking. The proposal is designed to operate 24 hours a day, seven days a week.

The elements of the proposal which have been subject to the EPA's assessment are included in Table 1.

Table 1: Proposal content document (CSBP 2022b).

Proposal element	Location	Maximum extent or range
Physical elements		
Overall extent of the proposal	Figure 2 Figure 3	A development envelope of 27.52 ha, including less than 1 ha of clearing, within the 138 ha CSBP Kwinana Industrial Complex.
Ammonia plant		300,000 tpa nominal capacity
Utilities		• 10 MW electrolyser for hydrogen production • electrolyser for green hydrogen production • natural gas fuelled steam boiler • water treatment plant for boiler water supply to ammonia plant • cooling water tower • flare • other utilities.
Infrastructure and logistics buildings		• existing control room modification • office and maintenance workshop relocation • ammonium nitrate storage dome shelter relocation.

Operational elements		
Gas supply (natural gas)		Nominal 27 TJ per day via gas pipeline (sourced DBNGP).
Power supply		Internal generation of up to 11 MW from process waste heat. Connection to the SWIS for supply of up to 5.6 MW electricity and purchase of equivalent renewable energy certificates (RECs) for the electrolyser.
Water supply		Up to 1,610 ML per annum.
Liquid effluent		Liquid effluent will be disposed offsite via the Water Corporation's existing Sepia Depression Ocean Outlet Landline (SDOOL) at Cape Peron.
Noise		< 30 dB(A) cumulative at nearest noise sensitive premises. < 70 dB(A) at proposal boundary.
Proposal elements with greenhouse gas emissions		
Construction elements		
Scope 1	N/A	Estimated 19,505 tonnes CO_2-e.
Scope 2		None (any occurring will displace Scope 1 emissions described above)
Scope 3		24,055 tonnes CO_2-e.
Operational elements		
Scope 1	NA	Estimated maximum 539,003 tonnes CO_2-e per annum.
Scope 2		Estimated 33,735 tCO_2-e per annum avoided via purchase of RECs
Scope 3		Estimated 42,961 tonnes CO_2-e per annum.
Timing elements		
Proposal timing	Project life	The proposal is anticipated to commence in the first half of 2024 with an expected project life comprising: • Operation phase – 30 years* • Decommissioning – 2 years.

***The operational phase begins during commissioning.**

Units and abbreviations

CO_2-e – carbon dioxide equivalent
dB(A) – A-weighted decibel
GJ – gigajoule
GL/a – gigalitres per annum
ha – hectare
kg - kilogram
ML - megalitres
MW – megawatts
NO_x – Nitrogen oxide
REC – renewable energy certificates
SDOOL - sepia depression ocean outlet landline
SWIS – southwest interconnected system
TJ – terajoule
tpa – tonnes per annum

Proposal alternatives

Section 2.2 of the proponent's referral supporting information document (CSBP 2022a) describes the alternatives considered for the proposal. The option to "do nothing" with respect to increasing ammonia production capacity at CSBP Kwinana would mean that the potential to achieve reduction in environmental impacts would not be realised. Specifically, reductions in Scope 3 GHG emissions associated with the transport of imported ammonia will not be avoided.

The proponent completed a project location and size optimisation study that considered two plant capacities of 300,000 tpa and 600,000 tpa at CSBP Kwinana and Geraldton. The study identified a 300,000 tpa plant at CSBP Kwinana as the preferred option. The plant size was driven by CSBP's current ammonia requirements. Locating the plant in Kwinana alleviates costs and potential environmental risks and impacts associated with loading, freight and unloading. The study noted that a plant located in Geraldton would require the ammonia to be transported to CSBP Kwinana for local consumption (CSBP 2022a). The design of the plant was considered and the chosen design is optimal for both production capacity and emissions intensity for GHG emissions (CSBP 2023).

The proposal will incorporate a small-scale 10 MW electrolyser to develop CSBP's operational capability while reducing the project's Scope 1 GHG emissions. Further substitution of natural gas with green hydrogen as feedstock is proposed when it becomes commercially viable. Green hydrogen is proposed to be sourced from either additional investment in electrolysers and on-site hydrogen generation, or pipeline supply from third parties (CSBP 2022a).

The proponent has opted to develop the proposal in the Kwinana Industrial Area. CSBP Kwinana was selected as the preferred location due to being an existing and established facility realising efficiencies related to industrial ecology with existing infrastructure, such as ammonia storage tanks and natural gas supply pipeline (CSBP 2022a). This approach enables standalone operation but allows for integration with the overall site facilities. The selected option potentially minimises the need to clear vegetation and leverages existing infrastructure to reduce development and resource requirements in comparison to developing a greenfield location for the proposal.

The proponent considered operating a plant using solely renewable electricity to generate hydrogen from the electrolysis of water (green hydrogen). This option was precluded given access to adequate renewable energy or cost-effective green hydrogen is not currently available in the vicinity of the proposal. The cost of constructing and operating infrastructure to provide renewable hydrogen for ammonia production is significantly higher than the cost of methane-based ammonia production and was stated to be economically unviable at this time (CSBP 2022a).

Figure 1: Project location

Figure 2: Development envelope and disturbance footprint

Figure 3: Ammonia plant and storage locations

2 Assessment of key environmental factors

This section reports the outcome of the EPA's assessment of the key environmental factors against its environmental objectives, and its recommendations on conditions the proposal should be subject to if it is implemented.

The EPA has also considered the principles of the *Environmental Protection Act 1986* (see Appendix C) in assessing whether the residual impacts will be consistent with its environmental factor objective.

The EPA evaluated the impacts of the proposal on other environmental factors and concluded these were not key factors for the assessment. This evaluation is included in Appendix D.

2.1 Greenhouse Gas Emissions

The EPA environmental objective for greenhouse gas emissions is *to minimise the risk of environmental harm associated with climate change by reducing greenhouse gas emissions as far as practicable* (EPA 2023).

Key Environmental Values and context

GHG emissions contribute to climate change, which impacts on WA's environment. There is an established link between GHG emissions and the risk of climate change. The EPA recognises that climate change will impact on WA's environment and environmental values. Climate change has already caused drying of the State's south-west, which in turn places additional pressures on water resources, flora and fauna, marine environmental quality, and social surroundings.

The EPA advises that for every 1,000 billion (G) tCO_2 emitted by human activity, global surface temperature rises by 0.45°C, as a best estimate, with a likely range from 0.27°C to 0.63°C (IPCC 2023). The EPA assesses GHG because of the link between cumulative emissions and risks to WA's environment, even if the specific impact of the proposal emissions are not known. The EPA's *Environmental factor Guideline – Greenhouse Gas Emissions* (GHG Guideline) acknowledges GHGs from a cumulative range of sources may have an impact on WA's environment. The GHG Guideline is to inform the assessment but does not determine the assessment outcome.

The proposal will contribute up to 539,003 tonnes CO_2-e per annum of Scope 1 emissions which exceeds the 100,000 t CO_2-e per annum threshold detailed in the GHG Guideline. The EPA's consideration of the GHG Guideline in its assessment of this proposal therefore means the impact of cumulative emissions on WA's environment have been considered for this proposal.

The proponent submitted version 0 of the GHG Management Plan (GHG EMP) with the referral submission to EPA on 8 December 2022. During the assessment process, the proponent was encouraged to revise the GHG EMP to ensure alignment with the April 2023 GHG Guideline. The proponent subsequently submitted a revised version of the GHG EMP (Revision 1, dated 11 September 2023; CSBP 2023) which the EPA has used as the basis for its assessment.

The proponent provided benchmarking against emission intensities for Australia, global ammonia plants of similar production capacities, and the Safeguard Mechanism default emission intensity. The emission intensity for AP3 is expected to be below that of the existing plant and the default Safeguard mechanism value (CSBP 2023). A best practice review of technologies was

completed for the proposal by Technip Energies (2022) and the technologies selected for the proposal were determined to be best practice.

The methodology for calculation of GHG emissions is consistent with national guidance and all emission sources have been identified. In this case, the proponent has undertaken a review of the technology to show it is best practice (Technip Energies 2022) and the benchmarking of the plant shows a lower emission rate, than other plants in Kwinana and the world at this size, largely as a result of the chosen technology. As this type of plant is common and direct comparisons and benchmarking can be made, there is a higher level of confidence in the calculations.

The EPA advises that the proponent has benchmarked its plant against other plants and the emissions intensity for a plant of this size is lower than existing plants of this size across the world. The benchmarking indicates that the design process has been appropriate and the technology selection has avoided and minimised GHG emissions prior to the setting of a baseline. The EPA advises that the estimated baseline emissions provided by the proponent have appropriately considered avoidance and minimisation.

The EPA notes the proponent's site selection within the KIA, promoting intensification within an existing industrial area and the potential to reduce impacts in comparison to using a greenfield location.

Potential impacts from the proposal

The proposal includes the production of ammonia. The carbon dioxide (GHG) is produced during the ammonia manufacturing process when carbon monoxide is converted to carbon dioxide and when methane is combusted to provide heat to the primary reforming process and create steam using the steam boiler.

GHG emissions associated with the construction of the proposal are estimated to be:

- Scope 1: Approximately 19,505 tonnes CO_2-e to occur for approximately 2.5 years.
- Scope 2: Nil.
- Scope 3: Approximately 24,055 tonnes CO_2-e.

GHG emissions associated with the operation of the proposal are estimated (without mitigation) to be:

- Scope 1: Approximately 539,003 tonnes CO_2-e per annum.
- Scope 2: Up to 33,735 tonnes CO_2-e per annum.
- Scope 3: Approximately 42,961 tonnes CO_2-e per annum.

The total unabated emissions (Scope 1, 2 and 3) combined represent less than 0.008% of Western Australia's total annual emissions.

Scope 1 emissions are estimated to be up to 539,003 tonnes CO_2-e per annum. The main carbon emission sources are the feed natural gas stream to the primary reformer and the fuel natural gas to the primary reformer. Without emissions reductions, Scope 1 emissions are expected to be approximately 11,858,058 tonnes CO_2-e over the life of the proposal with mitigation only occurring at year 2050. Over a 30-year design life and with emission reduction actions, the total estimated scope 1 emissions for the life of the proposal are estimated to be approximately 6,468,031 tonnes CO_2-e, based on a maximum production rate of 300,000 tpa. The proposed emission reduction actions will mitigate approximately 5,390,027 tonnes CO_2-e over the life of the proposal. The EPA has considered the base case to be mitigation at year 2050 in this case but with no mitigation the avoidance of emissions would be significantly higher.

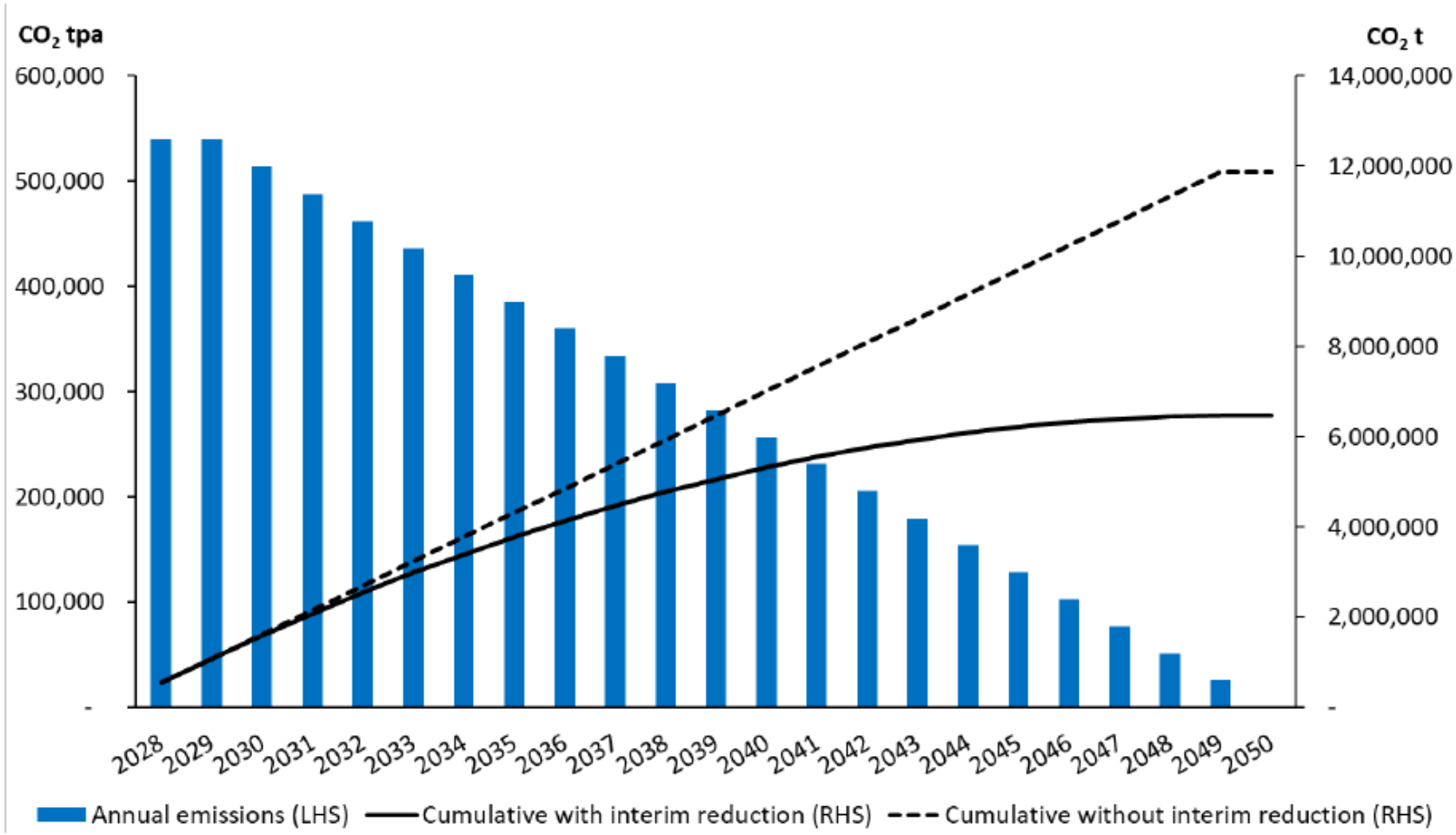

Figure 4: The proponent's trajectory to net zero (CSBP 2023).

Mitigation hierarchy and residual impacts

The long-term environmental outcome for the proposal, as outlined in the GHG EMP, is to avoid, reduce or mitigate 100% of Scope 1 GHG emissions from the operation of AP3 by 1 January 2050, in alignment with the GHG Guideline. The GHG EMP proposes an adaptive management approach to allow for future changes to the GHG EMP if required to ensure it remains aligned with contemporary policies and scientific advice.

Mitigation hierarchy measures applied by the proposal include:

- Avoidance and reduction of GHG emissions through plant design to optimise footprint, technology, and heat recovery.
- Commitment to purchase of renewable energy to meet external electricity demand.
- Implementation of the GHG EMP.
- Green hydrogen plant and ongoing plant improvement initiatives.
- Investment in technical solutions for GHG mitigation.
- Commitment to offset residual emissions through carbon offsets if required.

Emission avoidance measures applied during the design phase and result in the avoidance and reduction of GHG emissions:

- Addition of a 10 MW electrolyser to be powered from the waste heat recovery system and purchased renewable electricity (17,150 tonnes CO_2-e per annum Scope 1).
- Primary reformer optimisation and automation to reduce heat flux and natural gas consumption (18,400 tonnes CO_2-e per annum Scope 1).
- Enhanced process heat recovery to increase electricity generation and reduce consumption from the grid (22,600 tonnes CO_2-e per annum Scope 2).
- Substitution of gas-fired start-up heater with electric which is more energy efficient (380 tonnes CO_2-e per annum Scope 2).
- Proposal footprint optimisation to use existing cleared locations and minimise further clearing of vegetation (1,150 tonnes CO_2-e Scope 1).
- Leveraging existing infrastructure avoiding GHG emissions associated with duplicate facilities (150 tonnes CO_2-e per annum Scope 1 and 2).
- Expansion of sulphur bed to extend the duration between plant shutdowns required for sulphur removal catalyst (zinc oxide) replacement, therefore reducing the number of start-ups which rely on electricity (150 tonnes CO_2-e per annum Scope 2).

Emission reduction measures identified during the front-end engineering design phase:

- Reduction of pressure drop to reduce syngas compressor power consumption (1,700 tonnes CO_2-e per annum Scope 1 and 2,100 tonnes CO_2-e per annum Scope 2).
- Heat loss minimised by implementation of best available insulation and refractory technology (2,600 tonnes CO_2-e per annum Scope 1).
- Low energy and high-efficiency plant and equipment selected including larger steam turbine condenser, higher capacity cooling tower, additional heat exchange capacity, premium efficiency motors and light emitting diode (LED) lighting (1,200 tonnes CO_2-e per annum Scope 1 and 3,200 tonnes CO_2-e per annum Scope 2).
- Optimisation of packing in towers to enhance CO_2 removal via amine solution (400 tonnes CO_2-e per annum).

The EPA advises that the proponent has benchmarked its plant against other plants and the emissions intensity for a plant of this size is lower than existing plants of this size across the world. The benchmarking indicates that the design process has been appropriate and the technology selection has avoided and minimised GHG emissions prior to the setting of a baseline.

Emission mitigations proposed: The GHG EMP (CSBP 2023) includes projects in a conceptual or feasibility phase that are being explored to mitigate Scope 1 GHG emissions in future, including:

- Carbon capture and storage (CCS) (feasibility).
- Carbon capture and utilisation (CCU) (feasibility).
- Emerging technologies (conceptual) – finding research to fund viable alternatives, including cofounding a project to scale up an electrolytic method for producing ammonia and if successful may be a viable method for producing emissions-free ammonia.
- Alternate locations (feasibility)– Partnership for pre-feasibility study during 2022 to produce green hydrogen in the south of Perth and transport via a pipeline.

The proponent's preference is to use carbon offsets as a last resort once all other practical avoidance, reduction and mitigation options have been exhausted. If required, the proponent will acquire carbon offsets that meet contemporary Australian acceptability standards and integrity principles based on clear, enforceable and accountable methods and are approved by a recognised offset certification body. The EPA considers this approach and the use of a range of measures to minimise GHG emissions is appropriate, prior to consider offsets.

Assessment findings	Environmental outcome
The GHG Guideline recognises that Western Australia's GHG emissions are expected to continue to increase in the short to medium term. However, in the meantime the objective of the GHG Guideline is *to minimise the risk of environmental harm associated with climate change by reducing greenhouse gas emissions as far as practicable*. Annual Scope 1 emissions of 539,003 tonnes CO_2-e per year are predicted with a total of 6,468,031 tonnes CO_2-e with interim emissions reduction actions over the life of the project. Therefore, in the absence of any emissions reductions, a total of 11,858,058 tonnes CO_2-e would be expected over the operating lifespan. The total GHG emissions represent approximately 0.008% of Western Australia's yearly emissions and is unlikely to represent emissions high enough to warrant the EPA to indicate the proposal is unacceptable. The EPA notes that the proposal would reduce Scope 1, 2 and 3 GHG emissions when compared to the alternative scenario where ammonia is produced overseas. The EPA advises that the following aspects of the proposal are generally consistent with the GHG Guideline: • best practice technology • commitment to achieving net zero emissions for Scopes 1 and 2 emissions • continuous improvement approach • use of efficient technology and better practice technology • incorporating continual improvement • transparency and reporting	*Recommended conditions* The EPA found that the implementation of management practices for mitigation of GHG emissions is necessary to ensure there are no residual impacts from the generation of GHG emissions. The EPA advises that conditions are required to ensure transparency, reporting and continuous improvement. Condition B1 'Greenhouse Gas Emissions' requires: • a reduction in GHG emissions through the life of the project to net zero. • implementation and review of the GHG EMP (including reasonably practicable options for reductions in Scope 3 emissions) • public reporting of GHG emissions and reductions • preparation of a summary of relevant plan. Part C allows flexibility if the requirements of the GHG EMP are able to be met under another statutory decision-making process, in which case the implementation of management plan is no longer required. A GHG EMP provides flexibility about how future emissions reductions are achieved. The EPA notes the science and policy of GHG emissions and climate change is rapidly evolving. The EPA advises the GHG conditions are expected to be able to be responsive to this, particularly by enabling reviews and reporting of the proposal to reflect any significant changes. This may include if there are material

• consideration of offsetting emissions. The EPA notes that the trajectory from 2030 is a linear trajectory to net zero by 2050. The EPA notes the proposed emissions reduction actions will mitigate approximately 5,390,027 tonnes CO2-e of Scope 1 emissions over the life of the proposal. Even with the reduction, whether this reduction in net Scope 1 GHG emissions is sufficient to minimise the risk to climate change impacts to WA's environment depends on the state of cumulative emissions over time. The proponent has proposed measures to avoid all Scope 2 emissions. The proponent has identified measures it can undertake to minimise Scope 3 emissions. The EPA notes that Scope 3 emissions will be mostly avoided through the onsite production of ammonia reducing transport emissions required for importation. The EPA advises that further work is required from the proponent to review and reduce Scope 3 emissions associated with the proposal and a condition will ensure that this is completed. Based on the technology selection, proposed avoidance, minimisation and offset strategy, and linear trajectory, the EPA considers that the environmental outcome is consistent with its factor objective for GHG emissions.	changes to relevant State, Commonwealth or international GHG science or reports, policy, projections of WA emissions, or other mechanisms to support the achievement of net zero emissions (including scope 3 emissions). Offsets integrity is also a consideration. The EPA also notes the Minister can direct the EPA to inquire into Ministerial Statement conditions (including GHG conditions) at any time. <u>*Other legislation / decision-making processes*</u> Complementary reporting requirements to the Clean Energy Regulator to comply with the *National Greenhouse and Energy Reporting Act 2007* (NGER Act) and also subject to the NGER Emissions Reduction Fund Safeguard which requires facilities whose net emissions exceed the safeguard threshold to keep emissions at or below baseline. The proponent will be required to obtain a works approval and licence under Part V of the EP Act which will limit air emissions.

3 Holistic assessment

While the EPA assessed the impacts of the proposal against the key environmental factors and environmental values individually in the key factor assessments above, given the link between the key environmental factors and other environmental factors described in Appendix, the EPA also considered connections and interactions between them to inform a holistic view of impacts to the whole environment.

There is an established link between GHG emissions and the risk of climate change. The EPA recognises that climate change will impact on Western Australia's environment and environmental values. GHG emissions have the potential to impact on all other environmental factors through the effects of climate change. The EPA considers that the proposed mitigation conditions to regulate GHG emissions will also mean that the impacts to other factors and values of the environment are likely to be consistent with the EPA environmental factor objectives.

4 Recommendations

The EPA has taken the following into account in its assessment of the proposal:

- Environmental values likely to be significantly affected by the proposal.
- Residual impacts, emissions and effects in relation to the key environmental factor, separately and holistically (this has included considering cumulative impacts of GHG emissions).
- Likely environmental outcomes which can be achieved with the imposition of recommended conditions.
- The consistency of these outcomes with the EPA objective for the key environmental factor.
- The EPA's confidence in the proponent's proposed mitigation measures.
- Whether other statutory decision-making processes can mitigate the potential impacts of the proposal on the environment.
- Principles of the *Environmental Protection Act 1986* (EP Act).

The EPA recommends that the proposal may be implemented subject to the conditions recommended in Appendix A.

5 Other advice

The EPA may, if it sees fit, include other information, advice or recommendations relevant to the environment in its assessment reports, even if that information has not been taken into account by the EPA in its assessment of a proposal. The EPA provides the following information for consideration by the Minister.

The EPA notes that the following aspects of the Ammonia Expansion Project can be regulated through Part V of the EP Act through:

- the licensing of emissions and discharges from prescribed premises including noise, air (point source and fugitive, including odour)
- regulation of spills including chemicals and hydrocarbons.
- regulation of wastewater and potentially contaminated surface water discharges (marine environment)
- regulation of any potential discharges to ground water or soil during the operational phase.

The EPA notes that the CSBP Kwinana Industrial Complex has been classified as *'potentially contaminated – investigation required'* under the *Contaminated Sites Act 2003*. The site will continue to be managed in accordance with the *Contaminated Sites Act 2003*. The risk assessment under Part V of the EP Act will include existing contaminated soil and groundwater and specify conditions on a works approval where required.

Appendix A: Recommended conditions

Section 44(2)(b) of *Environmental Protection Act 1986* specifies that the EPA's report must set out (if it recommends that implementation be allowed) the conditions and procedures, if any, to which implementation should be subject. This appendix contains the EPA's recommended conditions and procedures.

STATEMENT THAT A PROPOSAL MAY BE IMPLEMENTED
***(Environmental Protection Act 1986*)**

AMMONIA EXPANSION PROJECT

Proposal: The Proposal is for the construction and operation of a new ammonia plant within the CSBP Kwinana Industrial Complex in the Kwinana Industrial Area approximately 40 kilometres south of the Perth Central Business District.

Proponent: CSBP Limited
Australian Business Number 81008 668 371

Proponent address: Kwinana Beach Road
Kwinana WA 6167

Assessment number: 2373

Report of the Environmental Protection Authority: 1753

Introduction: Pursuant to section 45 of the *Environmental Protection Act 1986,* it has been agreed that the proposal entitled Ammonia Expansion Project described in the 'Proposal Content Document' attachment of the referral of 8 December 2022, may be implemented and that the implementation of the proposal is subject to the following implementation conditions and procedures.

Conditions and procedures

Part A: Proposal extent

Part B: Environmental outcomes, prescriptions and objectives

Part C: Environmental management plans and monitoring

Part D: Compliance and other conditions

PART A: PROPOSAL EXTENT

A1 Limitations and Extent of Proposal

A1-1 The proponent must ensure that the proposal is implemented in such a manner that the following limitations or maximum extents / capacities / ranges are not exceeded:

Proposal element	Location	Maximum extent
Physical elements		
Overall extent of the Proposal	Within the development envelope shown in Figure 1	Clearing of no more than 1 **ha** of native vegetation within a development envelope of 27.52 **ha**
Operational Elements		
Ammonia plant	Within the development envelope shown in Figure 1	300,000 **tpa**
Timing elements		
Proposal time	Operation	Up to 30 years
	Decommissioning	Up to 2 years

*Table note: **Operation** is from the date of the commencement of commissioning.*

PART B – ENVIRONMENTAL OUTCOMES, PRESCRIPTIONS AND OBJECTIVES

B1 Greenhouse Gas Emissions

B1-1 The proponent shall take measures to ensure that **net GHG emissions** do not exceed:

(1) 1,078,006 tonnes of **CO_2-e** for the period from which this statement is issued until 31 December 2029;

(2) 2,309,520 tonnes of **CO_2-e** for the period between 1 January 2030 to 31 December 2034

(3) 1,668,753 tonnes of **CO_2-e** for the period between 1 January 2035 to 31 December 2039;

(4) 1,027,016 tonnes of **CO_2-e** for the period between 1 January 2040 to 31 December 2044;

(5) 348,735 tonnes of **CO_2-e** for the period between 1 January 2045 to 31 December 2049; and

(6) zero tonnes of **CO_2-e** for every consecutive five (5) year period from 1 January 2050 onwards.

B1-2 The proponent must implement the **Greenhouse Gas Environmental Management Plan** to:

(1) be consistent with the achievement of the **net GHG emissions** limits in condition B1-1 subject to the adjustment provided for in condition B1-1(6) (or achievement of emission reductions beyond those required by those emission limits);

(2) specify the estimated **proposal GHG emissions** and **emissions intensity** for the life of the proposal;

(3) include a comparison of the estimated **proposal GHG emissions** and **emissions intensity** for the life of the proposal against other relevant emissions reduction practices, pathways and comparable facilities;

(4) identify and describe any measures that the proponent will implement to avoid, reduce and/or offset **proposal GHG emissions** and/or reduce the **emissions intensity** of the proposal as far as practicable; and

(5) provide a program for the future review of the **Greenhouse Gas Environmental Management Plan** to:

(a) assess the effectiveness of measures referred to in condition B1-2(4);

(b) identify and describe options for future measures that the proponent may or could implement to avoid, reduce, and/or offset **proposal GHG emission** and/or reduce the **emissions intensity** of the proposal, as far as practicable; and

(c) consider reasonably practicable options for reductions in scope 3 emissions.

B1-3 Within one (1) month of:

(1) any subsequent version of the **confirmed Greenhouse Gas Environmental Management Plan** submitted under condition C1-2 which satisfies the requirements of condition B1-2,

the proponent must submit a separate summary of the relevant plan to the **CEO**, which must:

(2) include a summary of the matters specified in conditions B1-2(1) to condition B1-2(4); and

(3) be published as required by condition B1-7.

B1-4 The proponent shall submit an annual report to the **CEO** each year by 31 March, commencing on the first 31 March after the **commencement of operations**, or such other date within that financial year as is agreed by the **CEO** to align with other reporting requirements for **GHG**, specifying for the previous financial year:

(1) the quantity of **proposal GHG emissions**; and

(2) the **emissions intensity** for the proposal.

B1-5 The proponent shall submit to the **CEO** by 31 March 2030 or such other date within that financial year as is agreed by the **CEO** to align with other reporting requirements for **GHG**, and every five (5) years thereafter:

(1) a consolidated report specifying:

(a) for each of the preceding five financial years, the matters referred to in conditions B1-4(1) and conditions B1-4(2);

(b) for the period specified in condition B1-1 that ended on 30 June of the year before the report is due:

(i) the quantity of **proposal GHG emissions**;

(ii) the **net GHG emissions**;

(iii) any measures that have been implemented to avoid or reduce **proposal GHG emissions;** and

(iv) the type, quantity, identification or serial number, and date of retirement or cancellation of any **authorised offsets** which have been retired or cancelled and which have been used to calculate the **net GHG emissions** referred to in condition B1-5(1)(b)(ii), including written evidence of such retirement or cancellation.

(2) an audit and peer review report of the consolidated report required by condition B1-5(1), carried out by an independent person or independent persons with suitable technical experience dealing with the suitability of the methodology used to determine the matters set out in the consolidated report, whether the consolidated report is accurate and whether the consolidated report is supported by credible evidence.

B1-6 A consolidated report referred to in condition B1-5(1) must be accompanied by:

(1) a revision of the **confirmed Greenhouse Gas Environmental Management Plan** required under condition B1-2; and

(2) a separate summary report, for the period specified in condition B1-1 that ended on 30 June of the year before the report is due and any previous periods specified in condition B1-1, and which includes:

(a) a graphical comparison of **net GHG emissions** with the **net GHG emissions** limits detailed in condition B1-1;
(b) proposal **emissions intensity** compared to comparable facilities;

(c) a summary of measures to reduce the **proposal GHG emissions** undertaken by the proponent for compliance periods detailed in condition B1-1; and

(d) a clear statement as to whether limits for **net GHG emissions** set out in condition B1-1 have been met, and whether future **net GHG emissions** limits are likely to be met, including a description of any reasons why those limits have not been, and/or are unlikely to be met.

B1-7 In addition to the requirements of condition C1-6 about publication of the **confirmed Greenhouse Gas Environmental Management Plan**, the proponent shall make the summary of the **confirmed Greenhouse Gas Environmental Management Plan**, and all reports required by this condition B1 publicly available on the proponent's website within the timeframes specified below, or in any other manner or time specified by the **CEO**:

(1) the summary of the **confirmed Greenhouse Gas Environmental Management Plan** within twenty (20) business days of submitting the document to the **CEO** in accordance with condition B1-3; and

(2) the reports referred to in condition B1-4, condition B1-5, and condition B1-6 within twenty (20) business days of submitting the document to the **CEO**, and they shall remain published for the life of the proposal.

B1-8 In addition to the requirements of condition C1-2, the proponent must revise and submit to the **CEO** the **confirmed Greenhouse Gas Environmental Management Plan** by the date that the first five (5) yearly consolidated report is required to be submitted under condition B1-5 and every five (5) years after that date.

PART C – ENVIRONMENTAL MANAGEMENT PLANS AND MONITORING

Environmental Management Plans: Conditions Relating to Approval, Implementation, Review and Publication

C1-1 Upon being required to implement an environmental management plan under Part B, the proponent must:

(1) implement the most recent version of the **confirmed** environmental management plan; and

(2) continue to implement the **confirmed** environmental management plan referred to in condition C1-1(1), other than for any period which the **CEO** confirms by notice in writing that it has been demonstrated that the relevant requirements for the environmental management plan have been met, or are able to be met under another statutory decision-making process, in which case the implementation of the environmental management plan is no longer required for that period.

C1-2 The proponent:

(1) may review and revise a **confirmed** environmental management plan provided it meets the relevant requirements of that environmental management plan, including any consultation that may be required when preparing the environmental management plan;

(2) must review and revise a **confirmed** environmental management plan and ensure it meets the relevant requirements of that environmental management plan, including any consultation that may be required when preparing the environmental management plan, as and when directed by the **CEO;** and

(3) must revise and submit to the **CEO** the **confirmed** Environmental Management Plan if there is a material risk that the **outcomes** or **objectives** it is required to achieve will not be complied with, including but not limited to as a result of a change to the proposal.

C1-3 Despite condition C1-1, but subject to conditions C1-4 and C1-5, the proponent may implement minor revisions to an environmental management plan if the revisions will not result in new or increased **adverse impacts** to the environment or result in a risk to the achievement of the limits, **outcomes** or **objectives** which the environmental management plan is required to achieve.

C1-4 If the proponent is to implement minor revisions to an environmental management plan under condition C1-3, the proponent must provide the **CEO** with the following at least twenty (20) business days before it implements the revisions:

(1) the revised environmental management plan clearly showing the minor revisions;

(2) an explanation of and justification for the minor revisions; and

(3) an explanation of why the minor revisions will not result in new or increased **adverse impacts** to the environment or result in a risk to the achievement of the limits, **outcomes** or **objectives** which the environmental management plan is required to achieve.

C1-5 The proponent must cease to implement any revisions which the **CEO** notifies the proponent (at any time) in writing may not be implemented.

C1-6 **Confirmed** environmental management plans, and any revised environmental management plans under condition C1-4(1), must be published on the proponent's website and provided to the **CEO** in electronic form suitable for on-line publication by the Department of Water and Environmental Regulation within twenty (20) business days of being implemented, or being required to be implemented (whichever is earlier).

C2 Conditions Related to Monitoring

C2-1 The proponent must undertake monitoring capable of:

(1) substantiating whether the proposal limitations and extents in Part A are exceeded; and

(2) **detecting** and substantiating whether the environmental **outcomes** identified in Part B are achieved (excluding any environmental **outcomes** in Part B where an environmental management plan is expressly required to monitor achievement of that **outcome**).

C2-2 The proponent must submit as part of the Compliance Assessment Report required by condition D2-1, a compliance monitoring report that:

(1) outlines the monitoring that was undertaken during the implementation of the proposal;

(2) identifies why the monitoring was capable of substantiating whether the proposal limitation and extents in Part A are exceeded;

(3) for any environmental **outcomes** to which condition C2-1(2) applies, identifies why the monitoring was scientifically robust and capable of **detecting** whether the environmental **outcomes** in Part B are met;

(4) outlines the results of the monitoring;

(5) reports whether the proposal limitations and extents in Part A were exceeded and (for any environmental **outcomes** to which condition C2-

1(2) applies) whether the environmental **outcomes** in Part B were achieved, based on analysis of the results of the monitoring; and

(6) reports any actions taken by the proponent to remediate any potential non-compliance.

PART D – COMPLIANCE, TIME LIMITS, AUDITS AND OTHER CONDITIONS

D1 Non-compliance Reporting

D1-1 If the proponent becomes aware of a potential non-compliance, the proponent must:

(1) report this to the **CEO** within seven (7) days;

(2) implement **contingency measures**;

(3) investigate the cause;

(4) investigate environmental impacts;

(5) advise rectification measures to be implemented;

(6) advise any other measures to be implemented to ensure no further impact; and

(7) provide a report to the **CEO** within twenty-one (21) days of being aware of the potential non-compliance, detailing the measures required in conditions D1-1(1) to D1-1(6) above.

D1-2 Failure to comply with the requirements of a condition, or with the content of an environmental management plan required under a condition, constitutes a non-compliance with these conditions, regardless of whether the **contingency measures**, rectification or other measures in condition D1-1 above have been or are being implemented.

D2 Compliance Reporting

D2-1 The proponent must provide an annual Compliance Assessment Report to the **CEO** for the purpose of determining whether the implementation conditions are being complied with.

D2-2 Unless a different date or frequency is approved by the **CEO**, the first annual Compliance Assessment Report must be submitted within fifteen (15) months of the date of this Statement, and subsequent reports must be submitted annually from that date.

D2-3 Each annual Compliance Assessment Report must be endorsed by the proponent's Chief Executive Officer, or a person approved by proponent's Chief Executive Officer to be delegated to sign on the Chief Executive Officer's behalf.

D2-4 Each annual Compliance Assessment Report must:

(1) state whether each condition of this Statement has been complied with, including:

(a) exceedance of any proposal limits and extents;

(b) achievement of environmental **outcomes**;

(c) achievement of environmental **objectives**;

(d) requirements to implement the content of environmental management plans;

(e) monitoring requirements;

(f) implement **contingency measures**;

(g) requirements to implement adaptive management; and

(h) reporting requirements;

(2) include the results of any monitoring (inclusive of any raw data) that has been required under Part C in order to demonstrate that the limits in Part A, and any **outcomes** or any **objectives** are being met;

(3) provide evidence to substantiate statements of compliance, or details of where there has been a non-compliance;

(4) include the corrective, remedial and preventative actions taken in response to any potential non-compliance;

(5) be provided in a form suitable for publication on the proponent's website and online by the Department of Water and Environmental Regulation;

(6) be prepared and published consistent with the latest version of the Compliance Assessment Plan required by condition D2-5 which the **CEO** has confirmed by notice in writing satisfies the relevant requirements of Part C and Part D.

D2-5 The proponent must prepare a Compliance Assessment Plan which is submitted to the **CEO** at least six (6) months prior to the first Compliance Assessment Report required by condition D2-2, or prior to implementation of the proposal, whichever is sooner.

D2-6 The Compliance Assessment Plan must include:

(1) what, when and how information will be collected and recorded to assess compliance;

(2) the methods which will be used to assess compliance;

(3) the methods which will be used to validate the adequacy of the compliance assessment to determine whether the implementation conditions are being complied with;

(4) the retention of compliance assessments;

(5) the table of contents of Compliance Assessment Reports, including audit tables; and

(6) how and when Compliance Assessment Reports will be made publicly available, including usually being published on the proponent's website within sixty (60) days of being provided to the **CEO**.

D3 Contact Details

D3-1 The proponent must notify the **CEO** of any change of its name, physical address or postal address for the serving of notices or other correspondence within twenty-eight (28) days of such change. Where the proponent is a corporation or an association of persons, whether incorporated or not, the postal address is that of the principal place of business or of the principal office in the State.

D4 Time Limit for Proposal Implementation

D4-1 The proposal must be substantially commenced within five (5) years from the date of this Statement.

D4-2 The proponent must provide to the **CEO** documentary evidence demonstrating that they have complied with condition D4-1 no later than fourteen (14) days after the expiration of period specified in condition D4-1.

D4-3 If the proposal has not been substantially commenced within the period specified in condition D4-1, implementation of the proposal must not be commenced or continued after the expiration of that period.

D5 Public Availability of Data

D5-1 Subject to condition D5-2, within a reasonable time period approved by the **CEO** upon the issue of this Statement and for the remainder of the life of the proposal, the proponent must make publicly available, in a manner approved by the **CEO**, all validated environmental data collected before and after the date of this Statement relevant to the proposal (including sampling design, sampling methodologies, monitoring and other empirical data and derived information products (e.g. maps)), environmental management plans and reports relevant to the assessment of this proposal and implementation of this Statement.

D5-2 If:

(1) any data referred to in condition D5-1 contains trade secrets; or

(2) any data referred to in condition D5-1 contains particulars of confidential information (other than trade secrets) that has commercial value to a person that would be, or could reasonably be expected to be, destroyed or diminished if the confidential information were published,

the proponent may submit a request for approval from the **CEO** to not make this data publicly available and the **CEO** may agree to such a request if the **CEO** is satisfied that the data meets the above criteria.

D5-3 In making such a request the proponent must provide the **CEO** with an explanation and reasons why the data should not be made publicly available.

D6 Independent Audit

D6-1 The proponent must arrange for an independent audit of compliance with the conditions of this statement, including achievement of the environmental **outcomes** and/or the environmental **objectives** and/ or environmental performance with the conditions of this statement, as and when directed by the **CEO**.

D6-2 The independent audit must be carried out by a person with appropriate qualifications who is nominated or approved by the **CEO** to undertake the audit under condition D6-1.

D6-3 The proponent must submit the independent audit report with the Compliance Assessment Report required by condition D2-1, or at any time as and when directed in writing by the **CEO**. The audit report is to be supported by credible evidence to substantiate its findings.

D6-4 The independent audit report required by condition D6-1 is to be made publicly available in the same timeframe, manner and form as a Compliance Assessment Report, or as otherwise directed by the **CEO**.

Table 1: Abbreviations and definitions

Acronym or abbreviation	Definition or term
Authorised offsets	Units representing **GHG emissions** issued under one of the following schemes and cancelled or retired in accordance with any rules applicable at the relevant time governing the cancellation or retiring of units of that kind: (a) Australian Carbon Credit Units issued under the *Carbon Credits (Carbon Farming Initiative) Act 2011* (Cth); (b) Verified Emission Reductions issued under the Gold Standard program; (c) Verified Carbon Units issued under the Verified Carbon Standard program; or other offset units that the Minister has notified the proponent in writing meet integrity principles and are based on clear, enforceable and accountable methods.
Adverse impact / adversely impacted	Negative change that is neither trivial nor negligible that could result in a reduction in health, diversity or abundance of the receptor/s being impacted, or a reduction in **environmental value**. Adverse impacts can arise from direct or indirect impacts, or other impacts from the proposal.
Detecting/ Detectable	The smallest statistically discernible effect size that can be achieved with a monitoring strategy designed to achieve a statistical power value of at least 0.8 or an alternative value as determined by the **CEO**.
CEO	The Chief Executive Officer of the Department of the Public Service of the State responsible for the administration of section 48 of the *Environmental Protection Act 1986*, or the **CEO's** delegate.
CO_2-e	Carbon dioxide equivalent
Confirmed	In relation to a plan required to be made and submitted to the **CEO**, means, at the relevant time, the plan that the **CEO** confirmed, by notice in writing, meets the requirements of the relevant condition. In relation to a plan required to be implemented without the need to be first submitted to the **CEO**, means that plan until it is revised, and then means, at the relevant time, the plan that the **CEO** confirmed, by notice in writing, meets the requirements of the relevant condition.
Contingency measures	Planned actions for implementation if it is identified that an environmental **outcome**, environmental **objective**, **threshold criteria**, or **management target** are likely to be, or are being, exceeded. **Contingency measures** include changes to **operations** or reductions in disturbance or **adverse impacts** to reduce impacts and must be decisive actions that will quickly bring the impact to below any relevant threshold, **management target**

	and to ensure that the environmental **outcome** and/or **objective** can be met.
Emissions intensity	**Proposal GHG emissions** per tonnes per annum of ammonia produced.
Environmental value	A beneficial use, or ecosystem health condition.
GHG emissions	Greenhouse gas emissions expressed in tonnes of carbon dioxide equivalent (CO_2-e) as calculated in accordance with the definition of 'carbon dioxide equivalence' in Section 7 of the *National Greenhouse and Energy Reporting Act 2007* (Cth), or, if that definition is amended or repealed, the meaning set out in an Act, regulation or instrument concerning greenhouse gases as specified by the Minister.
Greenhouse Gas Environmental Management Plan	CSBP Ammonia Expansion Project Greenhouse Gas Management Plan (Version 1, 11 September 2023)
Greenhouse gas or GHG	Has the meaning given by Section 7A of the *National Greenhouse and Energy Reporting Act 2007* (Cth) or, if that definition is amended or repealed, the meaning set out in an Act, regulation or instrument concerning greenhouse gases as specified by the Minister.
ha	Hectare(s)
Management action	The identified actions implemented with the intent of to achieving the environmental **objective**.
Management target	A type of indicator to evaluate whether an environmental **objective** is being achieved.
Net GHG emissions	**Proposal GHG emissions** for a period less any reduction in **GHG Emissions** represented by the cancellation or retirement of **authorised offsets** which: (a) were cancelled or retired between the first day of the period until 1 March in the year after the period has ended; (b) have been identified in the report for that period as required by condition B1-5(1)(b)(iv); (c) have not been identified as cancelled or retired in the report for that period as required by condition B1-5(1)(b)(iv); (d) have not been used to offset **GHG emissions** other than **proposal GHG emissions**; and (e) were not generated by avoiding **proposal GHG emissions**.
Operations / Commencement of operations	**Operation** of the plant infrastructure for the proposal and includes pre-commissioning, commissioning, start-up and **operation** of the plant infrastructure for the proposal.

Objective(s)	An **objective** is the proposal-specific desired state for an environmental factor/s to be achieved from the implementation of **management actions**
Outcome(s)	A proposal-specific result to be achieved when implementing the Proposal.
Proposal GHG emissions	Scope 1 **GHG Emissions** released to the atmosphere as a direct result of an activity or series of activities that comprise/s or form/s part of the proposal, calculated in accordance with: (a) the *National Greenhouse and Energy Reporting Act 2007* (Cth) and its subsidiary legislation; or (b) if that Act or the relevant subsidiary legislation is amended or repealed such that it does not provide a mechanism for calculating the Proposal Emissions, any other Act, regulation or instrument concerning greenhouse gases as specified by the **CEO**.
Threshold criteria	The indicators that have been selected to represent limits of impact beyond which the environmental **outcome** is not being met.
tpa	Tonnes per annum

Figures (attached)

Figure 1 Development envelope (This map is a representation of the co-ordinates referenced in Schedule 1)

Figure 1 Development envelope

Schedule 1

All co-ordinates are in metres, listed in Map Grid of Australia Zone 50 (MGA Zone 50), datum of Geocentric Datum of Australia 2020 (GDA 2020).

Spatial data depicting the figures are held by the Department of Water and Environmental Regulation (DWER) Environment Online.

Appendix B: Decision-making authorities

Table B1: Identified relevant decision-making authorities for the proposal

Decision-Making Authority	Legislation (and approval)
1. Chief Dangerous Goods Officer Department of Mines, Industry Regulation and Safety	*Dangerous Goods Safety Act 2004* - storage and handling of dangerous goods
2. Chief Executive Officer Department of Water and Environmental Regulation	*Environmental Protection Act 1986* - part V works approval and licence - part IV compliance (Ministerial Statements)
3. Minister for Water	*Rights in Water and Irrigation Act 1914* - s. 5C licence to take water
4. Chief Executive Officer City of Kwinana	*Local Government Act 1995* - development approval

Appendix C: Environmental Protection Act principles

Table C1: Consideration of principles of the *Environmental Protection Act 1986*

EP Act principle	Consideration
1. The precautionary principle *Where there are threats of serious or irreversible damage, lack of full scientific certainty should not be used as a reason for postponing measures to prevent environmental degradation.* *In application of this precautionary principle, decisions should be guided by –* *(a) careful evaluation to avoid, where practicable, serious or irreversible damage to the environment; and* *(b) an assessment of the risk-weighted consequences of various options.*	The EPA has considered and has had particular regard to the precautionary principle in its assessment of GHG emissions. The EPA notes that climate change, as a result of cumulative GHG emissions, has the potential to cause damage to WA's environment. The specific impacts of any single proposal's GHG emissions are not able to be known with certainty at this time. However, the EPA has not used this as a reason for postponing assessment of the proposal's contribution to the State's GHG emissions or recommending practicable conditions to reduce emissions in order to minimise the risk of environmental harm associated with climate change. The objective of the GHG EMP for the proposal is to avoid, reduce or mitigate 100% of Scope 1 GHG emissions from the operation of the new ammonia plant by 2050. The proponent has committed to progressive environmental targets to the support the long-term objectives. Consistent with this the EPA has recommended conditions to ensure the achievement and reporting of net zero GHG emissions limits.
2. The principle of intergenerational equity *The present generation should ensure that the health, diversity and productivity of the environment is maintained and enhanced for the benefit of future generations.*	The EPA has considered and has had particular regard to the principle of intergenerational equity in its assessment of GHG emissions. The EPA considers consistency with this principle could be achieved with the implementation of its recommended conditions on GHG. The EPA has noted that GHG emissions pose a risk to future generations, however, also notes that the proponent has committed to avoiding or offsetting approximately 5,390,027 t CO_2-e, and to use offsets should these targets not be met by continuous improvement. The EPA has recommended conditions to ensure this.
3. The principle of the conservation of biological diversity and ecological integrity *Conservation of biological diversity and ecological integrity should be a fundamental consideration.*	The EPA has considered and has had particular regard to the principle of conservation of biological diversity and ecological integrity in its assessment of greenhouse gas emissions and other factors. The EPA has considered the extent of potential impacts from the proposal to flora and vegetation and terrestrial fauna to ensure consistency with the principle of conservation of biological diversity and ecological integrity. The proposal comprises the clearing of less than one hectare of previously cleared vegetation, considered to

EP Act principle	Consideration
	be in degraded condition, and is not considered to be analogous with any priority or threatened ecological communities, or significant fauna habitat. In addition, the EPA has considered the emission reductions proposed for GHG emissions and how this may impact biodiversity holistically. The EPA has concluded that given the nature of the impacts, the proposal is not likely to reduce the extent of any biological or ecological values with the area to a significant degree. The EPA is satisfied the proposal is not likely to be inconsistent with the EPA objectives and is consistent with the principles of the conservation of biological diversity and ecological integrity.
4. Principles relating to improved valuation, pricing and incentive mechanisms *(1) Environmental factors should be included in the valuation of assets and services.* *(2) The polluter pays principle — those who generate pollution and waste should bear the cost of containment, avoidance or abatement.* *(3) The users of goods and services should pay prices based on the full life cycle costs of providing goods and services, including the use of natural resources and assets and the ultimate disposal of any wastes.* *(4) Environmental goals, having been established, should be pursued in the most cost effective way, by establishing incentive structures, including market mechanisms, which enable those best placed to maximise benefits and/or minimise costs to develop their own solutions and responses to environmental problems.*	The proponent will be responsible for bearing the costs of implementing measures to reduce and offset GHG emissions, including the costs of adopting advances in process management and other measures in the future to further reduce and offset GHG emissions to achieve net zero by 2050.
5. The principle of waste minimisation *All reasonable and practicable measures should be taken to minimise the generation of waste and its discharge into the environment.*	In considering this principle, the EPA notes that waste will be minimised through the life of the proposal by adopting the hierarchy of waste controls of avoid, reuse, recycle, recover energy and safe disposal. The proposal is located in an area with sufficient internal and external waste management infrastructure to allow the above waste management hierarchy to be implemented.

Appendix D: Other environmental factors

Table D1: Evaluation of other environmental factors

Environmental factor	Description of the proposal's likely impacts on the environmental factor	Government agency and public comments	Evaluation of why the factor is not a key environmental factor
Land			
Flora and vegetation	The proposal includes the clearing of less than one hectare of vegetation considered to be in degraded condition.	Public comments • No public comments were received. Agency comments • No agency comments were received.	The EPA did not consider flora and vegetation to be a key environmental factor when the EPA set the level of assessment. The assessment of flora and vegetation within the proposal area concluded that: • the development envelope is part of a larger 25.78 ha area previously approved for hazard reduction clearing (slashing of understorey) under Clearing Permit 7390/1 granted by DWER on 16 February 2017 and expired in March 2022 • the extent of the clearing proposed comprises less than one hectare of vegetation considered to be in degraded condition and not considered to be analogous with any priority or threatened ecological communities or significant fauna habitat. The EPA considers it unlikely that the proposal would have a significant impact on flora and vegetation. The proposal meets the EPA objective to protect flora and vegetation so that biological diversity and ecological integrity are maintained. Accordingly, the EPA did not consider flora and vegetation to be a key environmental factor at the conclusion of its assessment.
Sea			
Marine environmental quality	The discharge of treated wastewater approximately 4 km offshore from Point Perron (SDOOL).	Public comments • No public comments were received. Agency comments	The EPA did not consider marine environmental quality to be a key environmental factor when the EPA set the level of assessment. Emissions and discharges to Water Corporation's Sepia Depression Ocean Outlet Landline (SDOOL) from existing

Environmental factor	Description of the proposal's likely impacts on the environmental factor	Government agency and public comments	Evaluation of why the factor is not a key environmental factor
		• DWER Industry Regulation advised that the proposed activities can be managed and regulated under Part V of the EP Act to meet the EPA objectives for Marine Environmental Quality (waste discharge).	operations at CSBP Kwinana are regulated through other Ministerial Statements and Part V licensing. The proponent has outlined that the proposal will not result in an increase to the maximum discharge quantity allowed under the Ministerial Statement. Therefore, no conditions or recommendations are required for the implementation of this proposal. Accordingly, the EPA did not consider marine environmental quality to be a key environmental factor at the conclusion of its assessment.
Air			
Air quality	Emissions to air from the ammonia plant, including nitrogen (NOx), ammonia and other volatile gases.	<u>Public comments</u> Numerous public comments were received related to air quality, such as: • Air quality in the region. • Increase in NOx emissions, cumulative NOx emissions to sensitive receptors, native vegetation and wetlands. <u>Agency comments</u> DWER advised: • Emissions and discharges for the construction and operational phases will be assessed through the works approval application process under Part V of the EP Act. This includes operational air emissions (point source, fugitive and including odour)	The EPA did not consider air quality to be a key environmental factor when the EPA set the level of assessment. The proposal meets the requirements of the National Environment Protection Measures (NEPM) and is located in the KIA which includes a buffer to sensitive receptors. Approvals required under Part V of the EP Act consider emissions and discharges to air, including all discharges that have the potential to cause significant impact to the environment. The assessment and conditioning of emissions to air under Part V of the EP Act is considered adequate to manage and mitigate impacts to air quality. Therefore, no conditions or recommendations are required for the implementation of this proposal. Accordingly, the EPA did not consider air quality to be a key environmental factor at the conclusion of its assessment.

Environmental factor	Description of the proposal's likely impacts on the environmental factor	Government agency and public comments	Evaluation of why the factor is not a key environmental factor
		• Air quality emissions are expected to be managed under Part V of the EP Act to meet EPA objectives for Air Quality, with additional information required from the proponent through this process.	
People			
Social surroundings	Noise emissions from the construction and operation of the proposal.	<u>Public comments</u> • No public comments were received. <u>Agency comments</u> DWER Industry Regulation advised: • The proposed activities can be managed and regulated under Part V of the EP Act to meet the EPA objectives for Social Surroundings (noise). • Potential noise and dust emissions associated with the construction of the proposal are expected to be considered under Part V of the EP Act.	The EPA did not consider social surroundings (noise) to be a key environmental factor when the EPA set the level of assessment. Approvals required under Part V of the EP Act consider emissions and discharges to air, including all discharges that have the potential to cause significant impact to the environment. The assessment and conditioning of emissions to social surroundings (noise and dust) under Part V of the EP Act and compliance with requirements under the *Environmental Protection (Noise) Regulations 1997* are considered adequate to manage and mitigate impacts to social surroundings (noise and dust). The proposal is situated within the KIA which includes a buffer to sensitive receptors. The development envelope primarily comprises existing hardstand and occurs within an area largely cleared for fire hazard protection. The proponent's search of the Aboriginal Heritage Inquiry System and the inherit database did not identify any registered heritage sites within the development envelope. Therefore, no conditions or recommendations are required for the implementation of this proposal. Accordingly, the EPA did not consider social surroundings to be a key environmental factor at the conclusion of its assessment.

Appendix E: Relevant policy, guidance and procedures

The EPA had particular regard to the policies, guidelines and procedures listed below in the assessment of the proposal.

- *Environmental factor guideline – Air quality* (EPA 2020)
- *Environmental factor guideline – Flora and vegetation* (EPA 2016a)
- *Environmental factor guideline – Greenhouse gas emissions* (EPA 2023)
- *Environmental factor guideline – Marine environmental quality* (EPA 2016b)
- *Environmental factor guideline – Social surroundings* (EPA 2016c)
- *Environmental impact assessment (Part IV Divisions 1 and 2) procedures manual* (EPA 2021)
- *Environmental impact assessment (Part IV Divisions 1 and 2) administrative procedures 2021* (State of Western Australia 2021a)
- *Statement of environmental principles, factors, objectives and aims of EIA* (EPA 2021b)
- *Technical guidance – Terrestrial vertebrate fauna surveys for environmental impact assessment* (EPA 2020).

Appendix F: List of submitters

7-day comment on referral

Organisations and public

- Submitter 1
- Submitter 2
- Submitter 3
- Conservation Council of WA Inc.
- Friends of Point Peron

Government agencies

- Department of Water and Environmental Regulation

Appendix G: Assessment timeline

Date	Progress stages	Time (weeks)
20 July 2023	EPA decided to assess – level of assessment set	
25 July 2023	EPA requested additional information	5 days
11 September 2023	EPA received final information for assessment	7
21 September 2023	EPA completed its assessment	6
13 November 2023	EPA provided report to the Minister for Environment	7
16 November 2023	EPA report published	1
7 December 2023	Appeals period closed	3

Timelines for an assessment may vary according to the complexity of the proposal and are usually agreed with the proponent soon after the EPA decides to assess the proposal and records the level of assessment.

In this case, the EPA met its timeline objective to complete its assessment and provide a report to the Minister.

References

CSBP Limited (CSBP) 2022a, *CSBP Ammonia Expansion Project. Referral of a Proposal under Section 38 of the Environmental Protection Act 1986. Referral Supporting Information Document.* CSBP Limited.

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