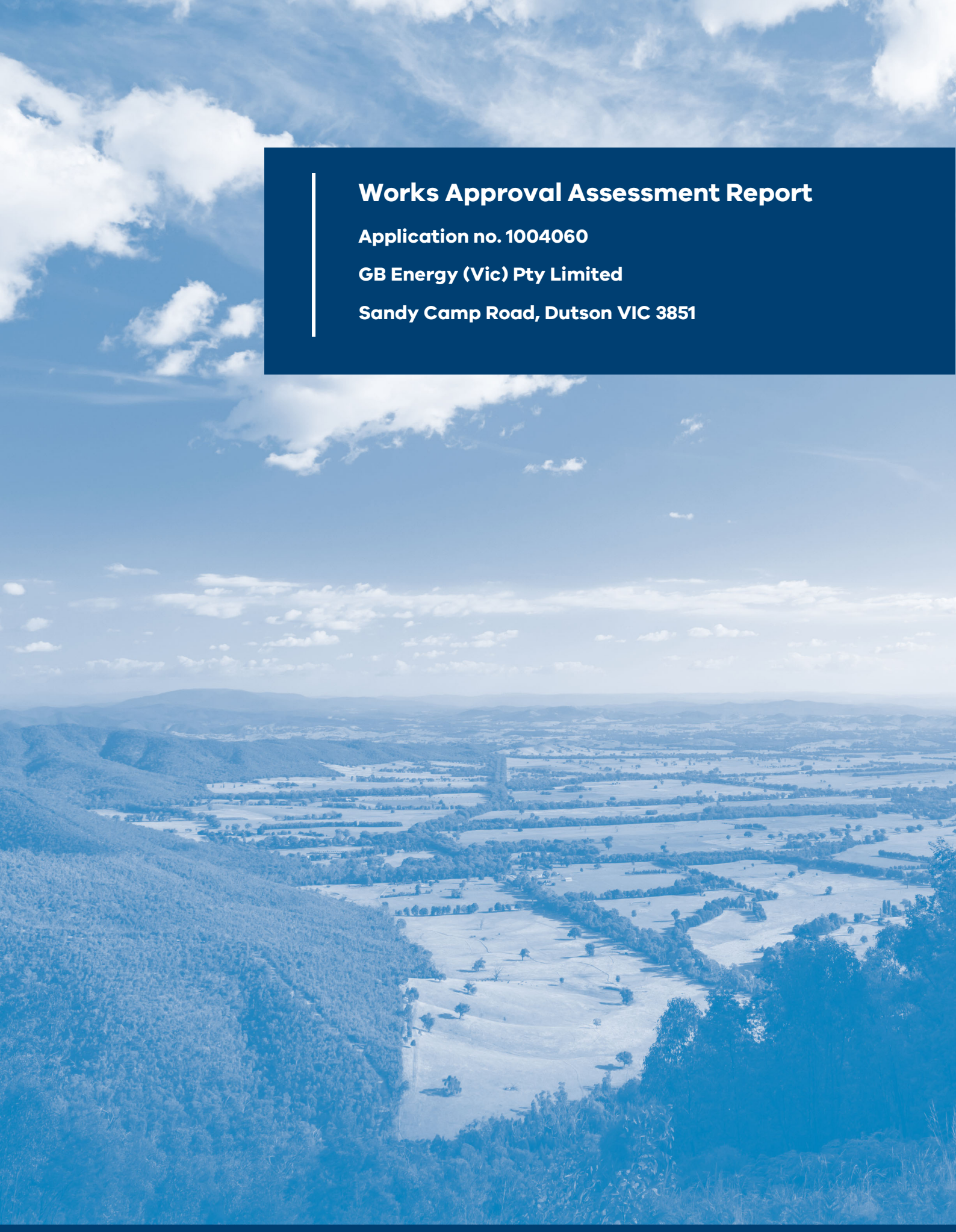

Works Approval Assessment Report

Application no. 1004060

GB Energy (Vic) Pty Limited

Sandy Camp Road, Dutson VIC 3851

EPA VICTORIA
Environment Protection Authority Victoria

VICTORIA State Government

Application No.	1004060
Applicant Name	GB Energy (Vic) Pty Limited
Address of Premises	Sandy Camp Road, Dutson VIC 3851
Proposal	Development of a natural gas compressor station
Schedule Category	L01 (General emissions to air)
Recommendation	Approve
Authority	S 19B(7)
Decision Date	6 May 2021

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ABBREVIATIONS AND GLOSSARY

AQIA	Air quality impact assessment
AERMOD	AERMOD Atmospheric dispersion modelling system and
EES	Environment Effects Statement
EES Act	Environment Effects Act 1978 (VIC)
EGP	the Eastern Gas Pipeline
EP Act	Environment Protection Act 1970 (VIC)
EPA Victoria	Environment Protection Authority Victoria is an independent statutory authority established under the *Environment Protection Act 1970*
GB Energy	GB Energy (Vic) Pty Limited
GBGP	Golden Beach Gas Project
GEA	Gas Engine Alternator
GHG	Greenhouse gas
MEA	Maximum extend achievable
MNES	Matters of national environmental significance
SEPP	State environment protection policy
SP Regulation	Environment Protection (Scheduled Premises) Regulations 2017
TEG	Triethylene glycol
VTS	Victorian Transmission System
WAA	Works approval application

1 EXECUTIVE SUMMARY

1.1 Purpose of this document

This document records EPA's assessment of works approval application no. 1004060 against the statutory requirements of the *Environment Protection Act 1970*, the *Environment Protection (Scheduled Premises) Regulations 2017*, state environment protection policies, and other relevant policies, standards, and guidelines. This assessment informs EPA's decision to issue or refuse to issue a works approval pursuant to s 19B(7) of the EP Act.

1.2 The works approval application

Background

GB Energy (Vic) Pty Limited (GB Energy) is proposing development of the Golden Beach Gas Project. The Project would develop the Golden Beach gas field located in the Gippsland Basin, 3 km offshore from Golden Beach. The Project includes a two-year gas production phase followed by a long-term gas storage phase. The Project would include the following key infrastructure components:

- *Two subsea horizontal wells approximately 3.8 kilometres offshore south from Golden beach, a 2.5-kilometre subsea pipeline and subsea infrastructure and a 1.3-kilometre pipeline shore crossing to the south of Golden Beach*
- *A 21-kilometre buried pipeline in a 30-metre wide right of way from south-west of Golden Beach to Longford*
- *Associated pipeline infrastructure, including a gas compressor station at Sandy Camp Road, Dutson VIC 3851 to compress the gas and collect water entrained in the gas.*

On 8 September 2019, the Minister for Planning decided that an environment effects statement was required for the Project. The Minister's decision specified procedures and requirements for the EES including areas it must investigate and report on the effects of the Project.

On 9 April 2021, the Minister published his assessment concluding that the residual impacts and risks of impacts are appropriately managed by proposed mitigation measures.

Works approval application

On 18 August 2020, Environment Protection Authority Victoria (EPA) received works approval application no. 1004060 from GB Energy. The application proposes development of an onshore gas compressor station at the premises of Sandy Camp Road, Dutson VIC 3851.

The proposed gas compressor station requires a works approval as an L01 (General emissions to air) scheduled premises pursuant to the *Environment Protection Act 1970* and *Environment Protection (Scheduled Premises) Regulations 2017*. EPA's consideration is limited to the gas compressor station and none of the other major components of the Golden Beach Gas Project.

1.3 EPA's assessment process overview

Key stages of the works approval application assessment process, including relevant EES milestones, were:

- 8 September 2019, the Minister for Planning made the decision that an EES is required for the Golden Beach Gas Project under the EE Act
- 16 September 2019, EPA received notice from the Minister for Planning
- 18 August 2020, works approval application received
- 8 September 2020, works approval application accepted
- 26 October 2020, joint exhibition of the works approval application with the EES and pipeline licence application commences
- 29 November 2020, Minster for Planning appoints Inquiry and Panel to inquire into the potential environment effects of the Golden Beach Gas Project
- 7 December 2020, joint exhibition of the works approval application with the EES and pipeline licence application concludes
- 17 December 2020, a directions hearing held
- 18 January 2021, a submitter conference held
- 9 April 2021, EPA receives the Minister for Planning's assessment on the Golden Beach Gas Project EES
- 9 May 2021, works approval application decision due date.

Submissions

During the joint exhibition of the EES and works approval application, 13 submissions were received. This included submissions from EPA, Wellington Shire Council, East Gippsland Climate Action Network, the CarbonNet Project, DELWP – Forest Fire and Regions Victoria, Australasian Native Orchid Society (Victoria Group) Inc, West Gippsland Catchment Management Authority. EPA has considered all relevant submissions.

Submitter conference

Following the exhibition period, a submitter conference was held. All submitters were invited to present. Of 13 submitters, only two attended. The EPA gave an oral presentation on its submission to the ESS. EPA also attended as observer as part of the works approval application process.

1.4 Assessment

The works approval assessment process considered the following critical issues:

Climate change, energy efficiency, and greenhouse gas emissions

EPA has assessed the proposed energy efficiency and greenhouse gas emissions management included in the application along with requirements of the *Climate Change Act 2017*. EPA is satisfied with the approach taken in identifying and accounting for greenhouse gas emissions. EPA has determined that the proposed best practice and mitigation measures for the gas compressor station

during its construction and operation phase complies with all relevant Victorian environment protection regulations, policies, and guidelines. This conclusion is subject to works approval and licencing conditions.

Air emissions

EPA has assessed the proposed air emissions and supporting air quality impact assessment included in the application. EPA is satisfied with the approach taken in identifying key pollutants of concern including the emission sources, type, and volume of pollutants. EPA has determined that the proposed best practice and mitigation measures for the gas compressor station during its construction and operation phase complies with all relevant Victorian environment protection regulations, policies, and guidelines. This conclusion is subject to works approval and licencing conditions.

Noise emissions

EPA has assessed the proposed noise emissions and noise impact assessment included in the application. EPA is satisfied with the approach taken in identifying the sources of noise emissions and the methodology for assessing its potential impact. EPA has determined that the proposed best practice and mitigation measures for the gas compressor station during its construction and operation phase complies with all relevant Victorian environment protection regulations, policies, and guidelines. This conclusion is subject to works approval and licencing conditions.

Land and groundwater

EPA has assessed the proposed land and groundwater management included in the application. EPA is satisfied with the approach taken in identifying potential land and groundwater contamination, including risks associated with acid sulfate soils. EPA has determined that the proposed best practice and mitigation measures for the gas compressor station during its construction and operation phase complies with all relevant Victorian environment protection regulations, policies, and guidelines. This conclusion is subject to works approval and licencing conditions.

1.5 Decision

EPA has assessed the works approval application and has issued GB Energy with a works approval subject to conditions. EPA considered all relevant information, including:

- All works approval application documents
- Referral responses
- Relevant submissions to the EES
- Submitter conference
- Minister's assessment of the EES and recommendations to EPA.

2 INTRODUCTION

On 18 August 2020, Environment Protection Authority Victoria (**EPA**) received works approval application no. 1004060 from GB Energy (Vic) Pty Limited (**GB Energy**). The application proposes development of an onshore gas compressor station at the premises of Sandy Camp Road, Dutson VIC 3851. The application seeks approval to develop and operate an L01 (General emissions to air) scheduled premises pursuant to the *Environment Protection Act 1970* (**EP Act**) and *Environment Protection (Scheduled Premises) Regulations 2017* (**SP Regulations**).

The gas compressor station forms part of the Golden Beach Gas Project. On 7 August 2019, the Minister for Planning received a referral from GB Energy under the Environment Effects Act 1978. On 8 September 2019, the Minister decided that an environment effects statement was required for the entire Project. The Minister's decision specified procedures and requirements for the EES including areas it must investigate and report on the effects of the Project.

This document records EPA's assessment of works approval application no. 1004060 against the statutory requirements of the EP Act, the SP Regulations, state environment protection policies (**SEPPs**), and other relevant policies, standards, and guidelines. This assessment informs EPA's decision to issue or refuse to issue a works approval pursuant to s 19B(7) of the EP Act.

This assessment report follows the following structure:

- Section 3 briefly summarises the works approval application.
- Section 4 outlines EPA's assessment framework.
- Section 5 records the assessment process overview including a summary of key dates and milestones.
- Section 6 records the regulatory compliance assessment against the EP Act and CC Act.
- Section 7 records the assessment against key environmental segments.
- Section 8 records EPA's consideration of the Minister for Planning's assessment of the EES and his recommendations for EPA.
- Section 9 records the assessment recommendation and recommended conditions.

This assessment report concludes with the recommendation to issue works approval to GB Energy Pursuant to s 19B(7) of the EP Act subject to conditions.

3 THE APPLICATION

3.1 Background

GB Energy are pursuing development approvals for the Golden Beach Gas Project (**GBGP**). The Project proposes development of the Golden Beach gas field which is located in the Gippsland Basin, 3 km offshore from Golden Beach and within Victorian waters (see Figure 1).

The Project would comprise of two stages. The first or 'production' stage would involve extracting a portion (approximately 40 petajoules) of gas within the gas field. GB Energy characterises the gas as sales-quality natural gas, with no heavy elements or condensates. This stage would last for approximately 2 years. The second or 'storage' stage would involve conversion of the gas field into a gas storage facility with a withdrawal capacity of up to 250 terajoules per day. Both production and storage stages would include pipeline connection to south-east Australian gas market via the Eastern Gas Pipeline (EGP) and the Victorian Transmission System (TVS) pipelines.

the Project would include the following key infrastructure components:

- *Two subsea horizontal wells approximately 3.8 kilometres offshore south from Golden beach, a 2.5-kilometre subsea pipeline and subsea infrastructure and a 1.3-kilometre pipeline shore crossing to the south of Golden Beach*
- *A 21-kilometre buried pipeline in a 30-metre wide right of way from south-west of Golden Beach to Longford*
- *Associated pipeline infrastructure, including a gas compressor station at Sandy Camp Road, Dutson VIC to compress the gas and collect water entrained in the gas.*

The gas compressor station will be bi-directional so to allow conveyance of gas into the EGP and TVS or back into the Golden Beach gas field during the storage stage of the GBGP.

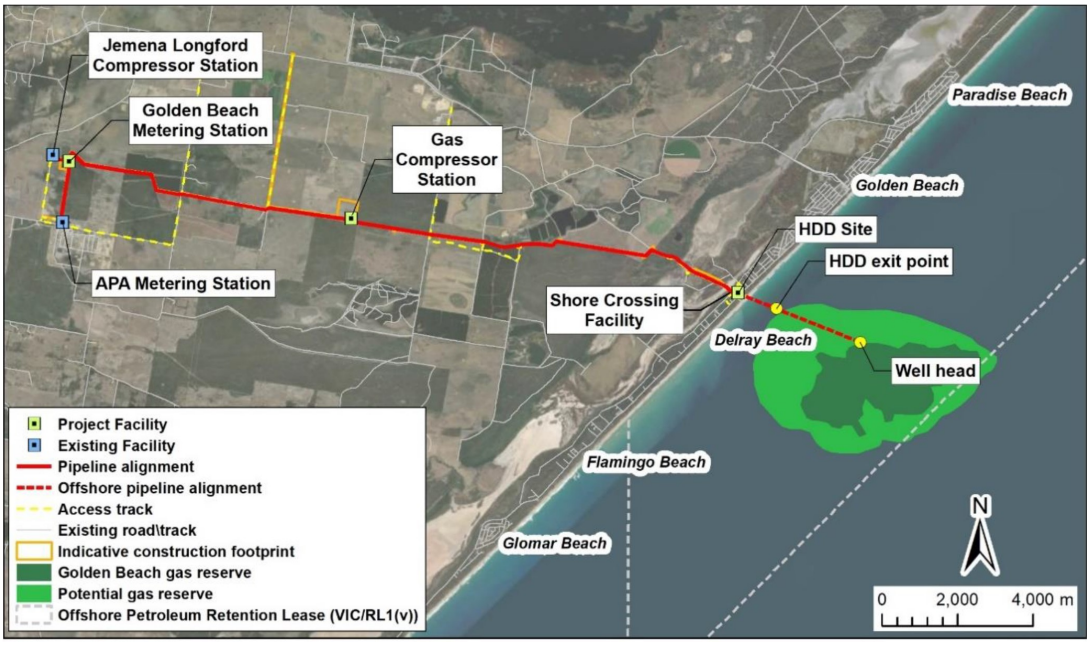

Figure 1 Map of the Golden Beach Gas Project (Source: Application no. 1004060)

3.2 Applicant

Company name	GB Energy (Vic) Pty Limited
Australian company number	615 553 010
Applicant signatory	Jade Rowarth – General Counsel
CEO	Tim Baldwin

GB Energy is a recently formed company founded in 2016. A Certificate of Registration of a Company issued by the Australian Securities and Investments Commission was attached as Appendix A to the works approval application. The GBGP is the company's first project. The company has not been previously issued with an EPA works approval or licence.

3.3 Application

On 18 August 2020, EPA received works approval application (**WAA**) from GB Energy. The application proposes development of the onshore gas compressor station component of the Golden Beach Gas Project. A works approval is required by the occupant of any premises for any act that would make those premises a scheduled premises. A works approval is also required by the occupant of scheduled premises for commencement of any construction, installation or modification of plant or equipment, the operation of which is likely to cause an increase or alteration in waste discharged or emitted from a premises or for the construction a chimney through which waste is or may be discharged.

The application has been submitted on the basis that the emissions from the gas compressor station trigger the requirement for works approval and licensing as an L01 (General emissions to air) scheduled premises pursuant to the EP Act and SP Regulations. The relevant indicators for this outcome being Oxides of Nitrogen (NOx), Benzene, and Formaldehyde.

The gas compressor station is planned to operate 24 hours a day, 7 days per week. Key works proposed as part of the gas compressor station are detailed in Section 7.2 and Tables 3 and 4 of the application. These have been reproduced in Tables 1 and 2. The gas compressor station to be designed in accordance with Section 6 of AS 2885.1: *Pipelines – gas and liquid petroleum design and construction*.

Table 1: Reproduction of table 3 of the works approval application – equipment that will be scaled up in the storage phase (Source: GB Energy)

Equipment description	Production phase	Storage phase
Compression	1 ~5 MW gas fired turbine driven centrifugal compressor	Up to 3 additional ~5 MW gas fired turbine driven centrifugal compressor
Dehydration	1 x 125 TJ/day triethylene glycol (**TEG**) unit	Additional 125 TJ/day TEG unit
Sales gas filter coalescer	1 x 125 TJ/day unit	Additional 125 TJ/day unit
Backup power generation	1 x Gas Engine Alternator (**GEA**) (sized for the blowdown compressor station load)	N/A

Instrument air package	The instrument air system will be sized for the storage phase (250 TJ/day) in the production phase of the development	Additional dry air receiver to be installed
Produced water	The produced water management system will allow for local storage on-site and water to be trucked offsite for disposal or irrigated onsite or onto adjacent land.	A produced water pipeline from the de-gassed water tank to the Gippsland Water Treatment Facility may be installed or produced water will be trucked offsite for disposal or if the water is able to be treated to a suitable standard it will be irrigated onto adjacent land.

Table 2: Simplified reproduction of table 4 of the works approval application – description of main components of the compressor station (Source: GB Energy)

COMPONENTS	
Pig receiver	Gas quality measurement
Slug catcher (finger type)	Odorant injection
Inlet separator	H_2S removal package (possible)
Compression unction scrubber	Fire and gas protection
Produced water storage and treatment system	Shutdown and relief
Turbine driven centrifugal compressor package	Storage (tanks for firewater and potable water etc.)
Gas cooling	Environmental protection (closed drains, storm water etc.)
TEG dehydration package	Cold vent and low-pressure (LP) flare
Sales gas filter/coalescer	

As listed in Table 1 above, the gas compressor station includes up to four ~5 MW gas fired turbine driven centrifugal compressors. Each compressor will have its own 12 m high stack, which combined with the 10 m high LP Flare, form the primary emission sources and trigger as an L01 scheduled premises.

Table 3: Reproduction of table 20 of the works approval application – summary modelled emission rates for each scenario (Source: GB Energy)

Pollutant	Scenario 1 (production phase)		Scenario 1 (production phase)		Scenario 3 (peak storage)	
	Compressor stack 1	LP Flare	Compressor stack 1, 2, 3, and 4	LP Flare	Compressor stack 1, 2, 3, and 4	LP Flare
Low NOx (15 ppm) compressor ignition system						
NOx (g/s)	0.449	0.104	0.100	0.0853	0.449	0.526
CO (g/s)	0.455	0.604	0.101	0.495	0.455	3.05
Standard NOx (38 ppm) compressor ignition system						
NOx (g/s)	1.14	0.104	0.253	0.0853	1.137	0.526
CO (g/s)	0.910	0.604	0.203	0.495	0.910	3.05

Low (15) ppm and standard (38 ppm) NOx compressor ignition system						
VOC (g/s)	0.261	1.04	0.0580	0.853	0.261	5.26
Benzene (g/s)	0.0000277	0.000253	0.00000617	0.000207	0.0000277	0.00128
Formaldehyde	0.00161	0.00186	0.000357	0.00152	0.00161	0.00940

3.4 Premises

GB Energy is proposing to locate the gas compressor station at the premises of Sandy Camp Road, Dutson VIC 3851 (the **site**). An approximate location for the premises or site has been specified as:

- Easting: 521858; Northing: 5769985; and Elevation: 32 metres.

The site is located within Victoria's Gippsland Region approximately 200 kms east of central Melbourne and 20 kms southeast of the regional township of Sale. The premises is 10 kms west of Golden Beach. The surrounding area is rural and dominated by native vegetation to the south and east and open grassed paddocks or fields to the north and west. The site is currently cleared of vegetation and used for grazing and is otherwise undeveloped making the proposal a greenfield development.

3.4.1 Site description and selection rationale

GB Energy have detailed reasoning behind the site selection in Section 3.2 of the works approval application. Reasons include proximity to the well head, land availability, separation distances to sensitive land uses, and site access or transport infrastructure (see Figure 1 above). The proposed premises is square shaped and designated approximately 500 m by 500 m area for the construction phase. The compressor station footprint will be small with an area of 300 m by 300 m. The 300 m by 300 m boundary will be fenced for security and safety reasons (see Figure 2 below).

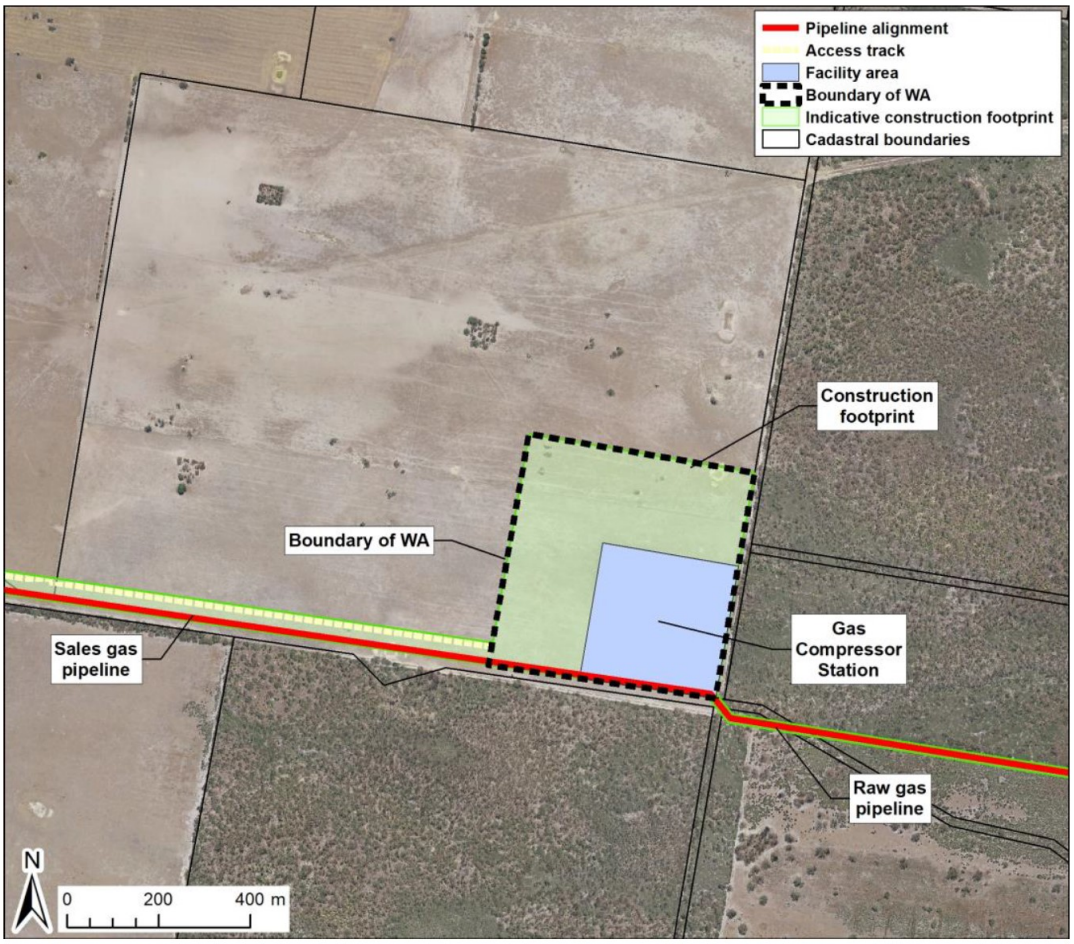

Figure 2 Map of the Golden Beach Gas Project (Source: Application no. 1004060)

3.4.2 Nearest sensitive receptors

The nearest sensitive land use is identified by GB Energy as a rural residence 2.2 km west of the premises along Sandy Camp Road, Duston VIC 3851. Other nearest sensitive land uses are in a similar direction towards the townships of Longford and Sale. GB Energy have also identified Lake Reeve as the nearest water course located approximately 6-8 km east of the site. Lake Reeve and the other Gippsland lakes further to the north form the Gippsland Lakes Ramsar Site.

3.4.3 Land use zones and development overlays

The premises is within the administrative boundary of Wellington Shire Council. Under the Wellington Shire Council Planning Scheme, the site is affected by the Farming Zone (FZ) (see Figure 3 below).

All land immediately surrounding the site to the southwest, west, and north is also zoned FZ. Land to the southeast and east is affected by the Public Use – Services and Utility Zone (PUZ1).

Part of the site following the southern and western property line is affected by the Bushfire Management Overlay due to the location of dense vegetation on the neighbouring lot.

The entire site is affected by the Design and Development Overlay (DDO) and Schedule 6 of the Design and Development Overlay (DDO6). The objective of DDO6 is to ensure that building height does not adversely effect the operation of the East Sale Royal Australian Air Force Base.

No other environmental or development overlays directly affect the premises.

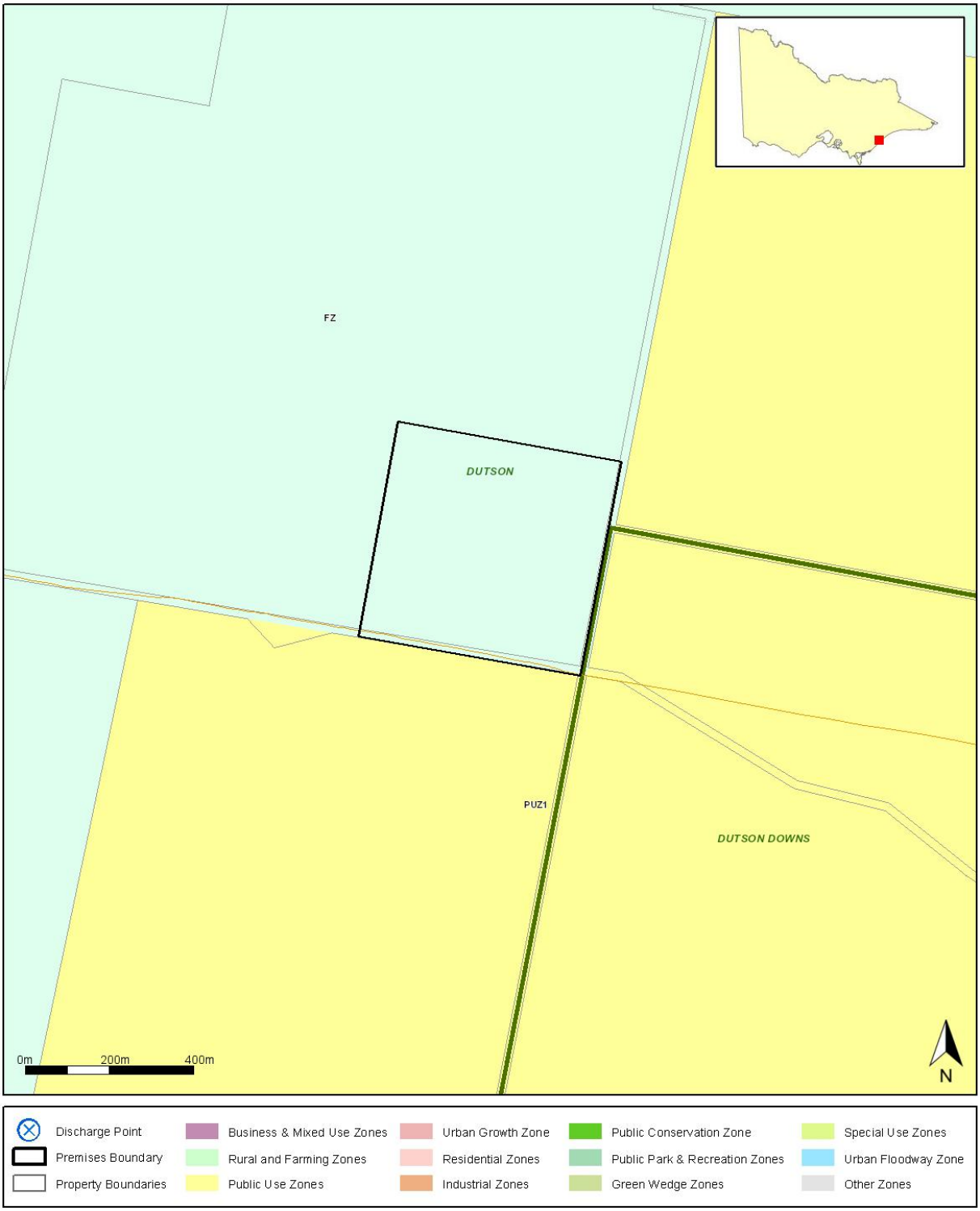

Figure 3 Land Use Zones and Development Overlays (Source: EPA)

4 ASSESSMENT FRAMEWORK

This section of this assessment report details EPA's framework for assessing works approval application no. 1004060. The assessment has been conducted against the statutory requirements of the EP Act, the SP Regulations, SEPPs, and other relevant policies, standards, and guidelines. This assessment informs EPA's decision to issue or refuse to issue a works approval pursuant to s 19B(7) of the EP Act.

Table 4: EPA's works approval application assessment framework

Environment Protection Act 1970
- Section 19A – Scheduled premises - Section 19B – Works approval - Section 19CA – Duration of works approval - Section 20 – Licensing of certain premises - Section 20C – Consideration of policy - Section 21 – Special conditions - Section 22 – Power of authority to require further information - Sections 38 and 29 – Discharges etc. to comply with policy, pollution of water - Sections 40 and 41 – Discharges etc. to comply with policy, pollution of atmosphere - Sections 44 and 45 – Discharge, or deposit of waste onto land to comply with policy, pollution of land
The Climate Change Act 2017
- Section 17 (1) provides for a requirement for EPA to consider climate change in works approval decisions - Section 17 (2) provides for a requirement for EPA to have regard to the potential impacts of climate change relevant to the decision or action and the potential contribution to the state's greenhouse gas (**GHG**) emissions of the decision or action - Section 17 (3) sets out the relevant considerations for EPA in having regard to the potential impacts of climate change. These are the potential biophysical impacts; the potential long and short-term economic, environmental, health and social impacts; the potential beneficial and detrimental impacts; the potential direct and indirect impacts; and the potential cumulative impacts - Section 17 (4) sets out the relevant considerations for EPA in having regard to the potential contribution to the state's GHG emissions. These are the potential short-term and long-term GHG emissions; the potential direct and indirect GHG emissions; the potential increases and decreases in GHG emissions; and the potential cumulative impacts of GHG emissions.

SEPP (Waters)

For detailed assessment framework see section 7.4 to 7.6 below.

SEPP (Prevention and Management of Contamination of Land)(SEPP (PMCL))

For detailed assessment framework see Section 7.6 below.

SEPP (Air Quality Management) (SEPP (AQM))

For detailed assessment framework see Section 7.1 and 7.2 below.

- EPA Publication No. 824: *'Protocol for Environmental Management (PEM) - Greenhouse Gas Emissions and Energy Efficiency in Industry'* (**PEM**)
- EPA Publication No. 1518: *'Recommended Separation Distances for Industrial Residual Air Emissions'*

Additional guidance relevant to this assessment

Summarised in relevant sub-sections of Section 7 below.

- EPA Publication No. 1517 '*Demonstrating Best Practice*'
- EPA Publication no. 1411 *'Noise from industry in Regional Victoria*'
- EPA Publication no. 1412 '*SEPP N–1 and NIRV Explanatory Notes'*
- EPA Publication no. 1413 *'Applying NIRV to Proposed and Existing Industry'*
- EPA Publication no. 1834 *'Civil and construction, building and demolition guide'.* This publication was realised in November 2020 and replaces the following publications:
    - EPA Publication no. *'480 Environmental Guidelines for Major Construction Sites'*
    - EPA Publication no. 1254 '*Noise control guidelines publication'*
- EPA Publication No. 1698 *'Liquid storage and handling guidelines'*
- EPA Publication No. 1695.1 '*Assessing and controlling risk: A guide for business'*
- EPA Publication No. IRWG655.1 *Acid Sulfate Soil and Rock*
- EPA Publication No. 1695.1 '*Assessing and controlling risk: A guide for business'*

5 ASSESSMENT - PROCESS OVERVIEW

This section of this assessment report details EPA's assessment process overview. The process overview summarises EPA's assessment actions conducted in accordance with the procedure prescribed by the EP Act. A summary timeline of the assessment process is provided in Table 5 below.

On 8 September 2019, the Minister for Planning made the decision that an EES was required for the Golden Beach Gas Project. On 16 September 2019, the Minister providing notice to EPA as a relevant decision-maker under section 8A and 8B(4) of the EE Act. The notice provided the Minister's Reasons for Decision and drew EPA's attention to the provisions of Section 8C of the EE Act. Section 8C prevents EPA from deciding on a works approval application until the EES process has been completed and the Minister's assessment has been considered by EPA.

The assessment process overview presented in Table 5 includes consideration of key EES milestones.

Table 5: Timeline of works approval process

Date	Activity
8 September 2019	The Minister for Planning made the decision that an EES is required for the Golden Beach Gas Project under the EE Act
16 September 2019	EPA received notice from the Minister for Planning
18 August 2020	Works approval application received
8 September 2020	Works approval application accepted
26 October 2020	Joint exhibition of the works approval application with the EES and pipeline licence application commences
29 November	Environment Effects Minister appoints Inquiry and Panel to inquire into the potential environment effects of the Golden Beach Gas Project
7 December 2020	Joint exhibition of the works approval application with the EES and pipeline licence application concludes
17 December 2020	A directions hearing held
18 January 2021	Submitter conference held
9 April 2021	EPA receives the Minister for Planning's assessment on the Golden Beach Gas Project EES
9 May 2021	Works approval application decision due date

5.1 Advertising

The WAA was advertised under the provisions of section 20AA of the EP Act. The application was jointly advertised or exhibited alongside the EES and pipelines licence application (No. PL006928). GB Energy provided notice of the exhibition and hosted the EES, works approval application, and

pipeline application on the GB Energy website. The exhibition period commenced from 26 October and ran for 30 business days concluding on 7 December 2020.

5.2 Public submissions

In accordance with section 19B(3B) of the EP Act, comments on the works approval application must be made as a submission on the EES. The submission period aligned with the exhibition period from 26 October to 7 December 2020. During that time 13 submissions were received. This included submissions from EPA, Wellington Shire Council, East Gippsland Climate Action Network, the CarbonNet Project, DELWP – Forest Fire and Regions Victoria, Australasian Native Orchid Society (Victoria Group) Inc, West Gippsland Catchment Management Authority.

Issues raised in the submissions covers the Golden Beach Gas Project, the pipeline, and gas compressor station. This included but was not limited to:

- Need for the Project and whether gas should be supported over renewable energy
- Impacts on climate change and commitments to GHG emission reductions
- Protection of the Gippsland Lakes Ramsar Wetlands
- Removal of and impacts on native vegetation
- Impacts on local air quality
- Management of contaminated soils including acid sulphate soils
- Impacts from noise and vibration from construction and operation activities

5.3 Submitter conference

The Inquiry appointed under the EE Act was required to conduct its proceedings through a submitter conference. As the works approval application was jointly advertised with the EES, EPA was not able to call a 20B conference. All submitters were invited to present at the conference but only two attended. The EPA gave an oral presentation on its submission to the ESS. EPA also attended as observer as part of the works approval application process. Submission relevant to EPA's consideration of the WAA are incorporated into the assessment sections of this report.

5.4 Referral agency comments

In accordance with s19B of the EP Act, relevant authorities and protection agencies were either contacted for comment or made comments to the EES. Table 6 summarises the responses considered:

Table 6: Summary of referral agency comments on application

Agency	Summary of comment
Wellington Shire Council	Proposed gas compressor station is exempt from Planning Scheme requirements pursuant to section 85 of the Pipelines Act 2005

West Gippsland Catchment Management Authority	No objections to the works approval application for gas compressor station Site is more than 1,000 m from nearest designated waterway and not likely to be subject to riverine flooding

5.5 EPA's consideration of the Minister's Assessment of the EES

See Section 8 of this report for a summary of EPA's assessment of the Minister's Assessment of the EES and recommendations to EPA.

5.6 Assessment process

The assessment was undertaken by officers of the Development Assessments Unit, supported by subject matter and technical specialists. The assessment report was subject to usual internal quality assurance review processes.

6 ASSESSMENT – REGULATORY COMPLIANCE

6.1 Environment Protection Act 1970

The application has been assessed for compliance with the EP Act. Key sections of the EP Act, relevant to this works approval application are discussed below:

- Section 19A – Scheduled Premises

The proposal to install, construct, or develop a gas compressor station is scheduled L01 (General emissions to air).

- Section 19B – Works Approval

EPA is satisfied that the WAA has been made in accordance with the EP Act.

- Section 20C(3)(b) – Fit and proper person

GB Energy submitted an offence declaration form confirming that neither the company nor any directors had been found guilty of any relevant offences in the last 10 years. EPA is satisfied GB Energy is a fit and proper person.

- Sections 38 and 39 – Discharges etc. to comply with policy, pollution of water

EPA is satisfied that the proposal complies with the relevant SEPPs, guidance and standards, subject to works approval conditions (see section 7.4- 7.6).

- Sections 40 and 41 – Discharges etc. to comply with policy, pollution of atmosphere

EPA is satisfied that the proposal complies with the relevant SEPPs, guidance and standards, subject to works approval conditions (see section 7.2 and 7.3).

- Sections 44 and 45 – Discharge, or deposit of waste onto land to comply with policy, pollution of land

EPA is satisfied that the proposal complies with the relevant SEPPs, guidance and standards, subject to works approval conditions (see section 7.6).

6.2 Climate Change Act 2017

EPA's assessment framework for the CC Act is summarised in Table 4. Sections 17(2)-(4) of the CC Act sets out the relevant consideration for EPA in making a decision on works approval and licences. These are the potential impacts of climate relevant to the decision, the potential contribution to the State's GHG emissions, and any guidelines issued by the Minister under section 18 of the CC Act.

In its WAA, GB Energy has:

- assessed energy use and GHG emissions specific to the gas compressor station in Section 8.1;
- detailed best practice GHG emission management in Section 8.2;
- listed mitigation measures for GHG emission impacts in Table 14;
- assessed climate change risk in Section 15.2.

EPA has assessed the WAA against the assessment framework above and in Table 4. EPA notes the absence of Ministerial guidance for decision makers issued under section 18 of the CC Act. In this instance, the requirement for works approval is for the gas compressor station as an L01 (General emissions to air) scheduled premises. The scope of the infrastructure assessed is limited to the gas compressor station and associated equipment and controls. EPA does not have administrative oversight of the pipeline or development of the offshore gas field as part of its works approvals and licencing processes nor climate change considerations for the entire GBGP.

The WAA has detailed GHG emissions in accordance with the requirements of section 17(3) and 17(4) of the CC Act. Emissions relevant to the gas compressor station are summarised in Section 7.1 of this report. EES Technical Report H: *Greenhouse Gas Emissions impact Assessment*, prepared by AECOM Australia Pty Ltd, also includes a comparison of total GHG emissions from the GBGP with the estimated emission budgets for Victoria over the period 2017-2050, as derived from *The Interim Emissions Reduction Targets for Victoria (2021-2030)*:

- The 2°C global warming budget is 1.85 $GtCO_2$-e and the 1.5°C global warming budget is 1.25 $GtCO_2$-e.
- Construction and operation of the GBGP are estimated to emit 4$MtCO_2$-e by 2050, representing 0.22% of the 2°C budget, and 0.32% of the 1.5°C budget

The GHG emission calculations did not include scope 3 emissions from the end use of gas supplied through the GBGP. This matter is further discussed in both the EES Inquiry Report and the Minister's EES Assessment. GB Energy's assessment of climate change and GHG emissions provided for the whole GBGP are considered a conservative representation of direct and indirect GHG emissions for the gas compressor station.

EPA has assessed the WAA against requirements of the CC Act and considers that it complies with the EPA interim guidance *Works Approvals – Consideration of Climate Change* (2018) subject to the following conditions with requirements to be further endorsed by EPA:

- final detailed design of the gas compressor station demonstrating implementation of:
    - best practice management for energy efficiency and the minimisation of greenhouse gas emissions, noise, and visible emissions
    - an accompanying air and greenhouse gas emission monitoring program including methods for analysing the amount and frequency of emissions during uncontrolled venting
- a Construction and Environment Management Plan prepared in accordance with EPA Publication no. 1834 '*Civil construction, building and demolition'*
    - an accompanying auditing plan to validation environmental performance during construction
- A plan for annual reporting of greenhouse gas emissions during the construction and operational phases of the facility
- A Commissioning and Auditing Plan to demonstrate how the validation environmental performance and operation of the gas compressor station will be in accordance with the application and any condition of this approval, including but not limited to compliance with (i) State Environment Protection Policy (Air Quality Management); and (ii) EPA Publication no. 1411 *'Noise from industry in Regional Victoria*'

Operating licencing conditions are also recommended and presented in Table 10 of this report.

Environment Protection Act 2017

From 1 July 2021, the new *Environment Protection Act 2017* comes into force. The new Act includes additional powers for EPA in its administration of operating licences. This includes provisions that limit the duration of the operating licence to no more than 20-years and a review provision for operating licences after they have been active for 4-years. The new Act also introduces the General Environmental Duty which will apply to all business in Victoria. If built and successfully commissioned, the works subject to this assessment will be subject to these provisions.

7 ASSESSMENT – ENVIRONMENTAL SEGMENTS

7.1 Energy use and GHG emissions

7.1.1 Energy use and GHG Emissions: Assessment Framework

- Climate Change Act 2017 (CC Act) sections 17(1), 17(2), 17(3), 17(4) (CC Act)
- EPA interim guidance Works Approvals – Consideration of Climate Change (2018 published on EPA's website at https://www.epa.vic.gov.au/business-andindustry/guidelines/licensing-and-works-approvals/works-approvals-consideration-ofclimate-change on 23 March 2018).
- SEPP (AQM) – Clause 33 – Management of Greenhouse Gases
- EPA Publication No. 824: *'Protocol for Environmental Management (PEM) - Greenhouse Gas Emissions and Energy Efficiency in Industry'* (**PEM**)
- Demonstrating Best Practice (EPA Publication no. 1517)

EPA requires a works approval applicant to detail proposed energy efficiency and GHG emissions and how these will be managed in accordance with SEPP (AQM) and the PEM. The objectives of SEPP (AQM) and the PEM are protecting beneficial uses, human health, and local amenity, meeting Victoria's air quality goals and objectives, and achieving the cleanest air quality possible.

Works approval applicants proposing a new source of GHG emissions must demonstrate compliance with the following critical Clauses of the Policy:

- Clause 18: managing emissions in accordance with the intent and objectives of the policy;
- Clause 19: applying best practice to the management of new sources of emissions;
- Clause 33: application of the protocol for environment management relating to GHG emissions

EPA must also have regard to potential impacts of climate change and with the relevant considerations identified in section 17(3) of the CC Act – see section 6.2 above.

7.1.2 Energy Use and GHG Emissions: The Application

GB Energy included an assessment of GHG emissions as part of its WAA. The assessment in the application draws from the EES Technical Report H: *Greenhouse Gas Emissions impact Assessment*, prepared by AECOM Australia Pty Ltd. Technical Report H assesses GHG emissions during the construction, operational, and decommissioning phases of the GBGP. Section 8.1 of the works approval application details energy use and GHG emissions specific to the gas compressor station. This includes emission estimates for construction, operation (production), operation (storage), and decommissioning phases presented in tables 9, 10, 11, and 12 of the application respectively.

GHG emissions for the gas compressor station were estimated in accordance with *The Greenhouse Gas Protocol* incorporating:

- Scope 1: Direct GHG emissions

- Scope 2: Indirect (imported energy) GHG emissions and
- Scope 3: Other indirect GHG emissions.

Technical Report H notes that the emission estimates do not include downstream Scope 3 emissions associated with the commercial and residential end use of natural gas. GB Energy has not included these emissions as it considers it is unable to influence gas demand and the end-use consumption of gas. Table 9 below shows a comparison of the compressor station's GHG emissions to Victoria's annual GHG emissions.

Table 7: Reproduction of table 13 of the works approval application – comparison of the compressor station's GHG emissions to Victoria's annual GHG emissions (Source: GB Energy)

Emissions source	Total emissions (kt CO_2-e/year)	Equivalent % of Victoria's annual total
Victoria 2018*	102,200	100.00%
Construction	11	0.01%
Operation (Production) Phase	53	0.05%
Operation (Storage) Phase	53	0.05%
Decommissioning	0.9	0.00%

***Victorian GHG emissions data was sourced from Australian National Greenhouse Accounts: State and Territory Greenhouse Gas Inventories 2018 (DISER, 2020)**

Best practice energy efficiency and GHG emission management for the gas compressor station are detailed in section 8.2 of the WAA. This includes an assessment in line with steps set out in 2.1 of the PEM:

- Step 1 – Estimate energy consumption
  - construction phase: 6,268 t CO_2-e
  - operation (production) phase: 41,243 t CO_2-e
  - operation (storage) phase: 42,391 t CO_2-e
  - Decommissioning phase: 890 t CO_2-e.
- Step 2 – Estimate direct GHG emissions
  - construction phase: 4,430 t CO_2-e
  - operation (production) phase: 11,498 t CO_2-e
  - operation (storage) phase: 10,268 t CO_2-e.
- Step 3 – Identify and evaluate opportunities to reduce GHG emissions
  - The application identifies the gas-fired turbines used for generating power for the centrifugal compressors as the main source of GHG emissions. With reference to *National Greenhouse Accounts Factors – Australian National Greenhouse Accounts*, the application characterises natural gas as a more efficient fuel source than alternatives such as diesel or electrically driven equipment. GB Energy also states

that the GBGP could assist in reducing Victoria's overall GHG emissions and support Victoria's transition to a low-carbon economy and that gas offers a flexible option for short-term and long-term energy supply and contribute to energy supply security and stability source during the transition of the energy sector to more renewables.

- Step 4 – Document steps 1 to 3.
    - Includes 9 proposed mitigation measures that primarily over construction phase of the gas compressor station.

7.1.3 Energy Use and GHG Emissions: Assessment Conclusions

EPA has reviewed the application against the energy efficiency and GHG emission assessment framework summarised above. EPA considers that the application has followed accepted international protocols for GHG emission accounting for the gas compressor station and the methods required under the PEM. The WAA application has also detailed best practice energy efficiency and GHG emission reduction measures. EPA considers the utilisation of the low-pressure flare best practice management of GHG emissions. EPA is satisfied that the proposed best practice and mitigation measures for the gas compressor station satisfies the requirements of SEPP (AQM) and the PEM subject to the following conditions with requirements to be further endorsed by EPA:

- Prior to commencing those components of works, final detailed design of the gas compressor station demonstrating implementation of:
    - best practice management for energy efficiency and the minimisation of greenhouse gas emissions, noise, and visible emissions
    - an accompanying air and greenhouse gas emission monitoring program including methods for analysing the amount and frequency of emissions during uncontrolled venting
- a Construction and Environment Management Plan prepared in accordance with EPA Publication no. 1834 '*Civil construction, building and demolition'*
    - an accompanying auditing plan to validation environmental performance during construction
- A plan for annual reporting of greenhouse gas emissions during the construction and operational phases of the facility
- At least 30 days before the commencement of any commissioning, you must provide to EPA a report or reports that include(s): A Commissioning and Auditing Plan to demonstrate how the validation environmental performance and operation of the gas compressor station will be in accordance with the application and any condition of this approval, including but not limited to compliance with (i) State Environment Protection Policy (Air Quality Management); and (ii) EPA Publication no. 1411 *'Noise from industry in Regional Victoria*'

Operating licencing conditions are also recommended and presented in Table 10 of this report.

7.2 Air emissions

7.2.1 Air Emissions: Assessment Framework

- State Environment Protection Policy (Air Quality Management) (SEPP (AQM))
- State Environment Protection Policy (Ambient Air Quality) (1999) (SEPP (AAQ))
- Construction of Input Meteorological Data Files for EPA Victoria's Regulatory Air Pollution Model (AERMOD) (EPA publication 1550)
- Guidance Notes for Using the Regulatory Air Model AERMOD in Victoria (EPA publication 1551)
- Recommended Separation Distances for Industrial Residual Air Emissions – Guideline (EPA publication 1518)
- Demonstrating Best Practice (EPA publication 1517)

EPA requires a works approval applicant to detail any proposed air emissions, including the emission sources, volume, and type of pollutants. Air emissions from diffuse and stationary sources must be managed in accordance with SEPP (AQM) with its objectives outlined in Clauses 6, 8, and 9. The objectives of the policy are protecting beneficial uses, human health and local amenity, meeting Victoria's air quality goals and objectives, and achieving the cleanest air quality possible.

Works approval applicant's proposing a new source of air emissions must demonstrate compliance with the following critical Clauses and Schedules of the Policy:

- Clause 18: managing emissions in accordance with the intent and objectives of the policy
- Clause 19: applying best practice to the management of new sources of emissions
- Clause 20: reducing the emission of substances classified as Class 3 Indicators to the maximum extend achievable (**MEA**)
- Clause 21: monitoring of emissions to enable EPA to determine whether the emissions are being managed in accordance with the policy and any other applicable statutory requirement
- Schedule E: emission limits for new stationary sources in Air Quality Control Regions

EPA requires a works approval applicant to provide a full air quality impact assessment if air emissions may impact on beneficial uses, public health, or local amenity. EPA assess this against the requirements of Clauses 18-21 above and Clause 27. This includes assessment against recommended separation distances of EPA Publication no. 1518 "Recommended separation distances for industrial residual air emissions". To facilitate this, Clause 28 allows EPA to require air emission modelling using EPA's endorsed regulatory model for air pollution modelling, AERMOD.

7.2.2 Air Emissions: The Application

GB Energy included a full air quality impact assessment (**AQIA**) as part its WAA. The AQIA draws from the EES Technical Report L: *Air Quality Impact Assessment*, prepared by AECOM Australia Pty Ltd. Section 10 of the WAA details energy use and GHG emissions specific to the gas compressor station. The WAA and AQIA have assessed potential emissions generated during the construction and demolition phase of the entire GBGP as well as emissions from the operational

phase of the gas compressor station. This includes AERMOD air dispersion modelling of the operation phase of the gas compressor station.

7.2.2.1 Construction and Demolition Phase

The works approval application and AQIA have identified demolition, earthworks, construction, and vehicle movement activities as the most likely sources of air emissions during the construction and demolition phase of the GBGP. Particulates or dust pollutant with the potential for visible dust plumes and elevated PM_{10} concentrations. Vehicular emissions during this phase are considered by GB Energy as minor contributor to the environment.

The AQIA also identifies best practice management mitigation measures for this phase of the development (section 10.2 of the application) which includes dust suppression, restricted vehicle movements and speed limits, covering vehicle loads, weather monitoring, dust monitoring, and odours materials management.

7.2.2.2 Gas Compressor Station Operational Phase

The WAA and AQIA have identified the compressors and low-pressure flare as the major sources of air emissions during the operational phase of the gas compressor station. Air emissions are generated through the combustion of fuel in the gas-fired turbine driven centrifugal compressors and through operation of the low-pressure flare. The pollutants of concern for these sources are identified as Nitrogen Dioxide (NO2), Carbon Monoxide (CO), and Volatile Organic Carbon (benzene and formaldehyde), which is informed by US EPA references. All emissions will be from stationary and point source stacks and the application includes details on these such as stack location, height, diameter, flow rates, and emission volumes under different operating scenarios. Consideration is given to both 'low NOx' and 'standard NOx' turbines.

Best practice

The AQIA also identifies best practice management mitigation measures for this phase of the development (section 10.2 of the application) which includes best practice design of the compressor station designed to minimise hydrocarbon and smoke release, plant and equipment maintenance, regular compressor maintenance, design and implementation of an air quality monitoring program (MM-AQ08- MM-AQ10). Flaring of process gas for reasons other than maintenance or emergency circumstances will be minimised as far as practicable. The WAA details consideration of alternative options to the low-pressure flare.

AERMOD air dispersion modelling

The AQIA included air dispersion modelling of the gas compressor station to demonstrate compliance with SEPP (AQM). The modelling was conducted for the following pollutants or indicators: NO_2, CO, benzene, and Formaldehyde. Modelling was conducted by GB Energy for three scenarios:

- Scenario 1: production phase emissions
    - *Operation of a single gas turbine and low-pressure flare (operating at average flow of 250 kg/h) at the compressor station during initial withdrawal from the Golden Beach reservoir.*
- Scenario 2: typical storage phase emissions

- *Operation of a single gas turbine and low-pressure flare for 77 per cent of the operational time, operation of four gas turbines and the flare for three per cent of operational time and no operation of turbines or flare for 2 per cent of operational time. Flare emissions calculated at an average flow rate (250 kg/h) with 40 hours (10 x 4-hour gas line purge to flare) operation at maximum emission rates (for 1,263 kg/h flow rate). This scenario represents long term (annual) emission patterns for the Project.*

- Scenario 3: peak storage phase emissions
  - *Continuous operation of four gas turbines and flare for 1,263 kg/h flow rate) during withdrawal/injection to/from the reservoir. This scenario represents worst-case emission for the compressor station. Peak operation is expected to occur only for 3 per cent of operational time and therefore this scenario is only representative of short term (less than one day) impacts.*

The modelling was conducted for both low NOx (15 ppm) and standard (38 ppm) NOx compressor ignition systems. The modelling incorporates background concentration assessment. Background pollutant concentrations collected by EPA's air quality monitoring stations was used. In the absence of monitoring data for the project area and consistent with a conservative approach, data was sourced from areas which have a greater pollution potential for population and industrial emissions. The data from EPA's Alphington and Traralgon monitoring stations was used. The background air pollution indicator concentrations adopted for the assessment are shown in Table 18-2 of the WAA. The modelling concludes compliance with Schedule A of SEPP (AQM) for all indicators and under all scenarios.

7.2.2.3 Air Emissions: Assessment Conclusions

EPA has reviewed the application against the air emission assessment framework summarised above. EPA is satisfied with the approach taken in identifying key pollutants of concern including the emission sources, type, and volume of pollutants. In regard to the modelling, the recommended regulatory air modelling program was used, and the methods of EPA Publication 1551 and SEPP (AQM) have been followed adequately. Concern with the use of background data from outside the project area was raised in a single submission. EPA considers the selected data to be a conservative approach for the purposes of this assessment. The modelling concludes compliance with SEPP (AQM) and EPA considers these results reliable and sufficiently conservative. EPA is also satisfied that the proposed best practice and mitigation measures for the gas compressor station satisfies the requirements of SEPP (AQM) and the PEM subject to the following conditions:

- Prior to commencing works, the company must submit to EPA for approval, the final detail design of the gas compressor station demonstrating implementation of:
  - best practice management and best available technology for energy efficiency and the minimisation of greenhouse gas emissions, noise, and visible emissions
  - an accompanying air and GHG emission monitoring program including (i) annual methods for analysing the amount and frequency of emissions during uncontrolled venting
  - findings of a hazard and operability study that considers all process and environmental risks for operation (normal and other than normal operating conditions)

- a Construction and Environment Management Plan prepared in accordance with EPA Publication no. 1834 'Civil construction, building and demolition'
    - an accompanying auditing plan to validation environmental performance during construction
- A plan for annual reporting of GHG emissions during the construction and operational phases of the facility
- At least 30 days before the commencement of any commissioning, you must provide to EPA a report or reports that include(s):
    - A Commissioning and Auditing Plan to demonstrate how the validation environmental performance and operation of the gas compressor station will be in accordance with the application and any condition of this approval, including but not limited to compliance with (i) State Environment Protection Policy (Air Quality Management); and (ii) EPA Publication no. 1411 *'Noise from industry in Regional Victoria*'

7.3 Noise Emissions

7.3.1 Noise Emissions: Assessment Framework

- EPA Publication no. 1411 *'Noise from industry in Regional Victoria*'
- EPA Publication no. 1412 '*SEPP N–1 and NIRV Explanatory Notes'*
- EPA Publication no. 1413 *'Applying NIRV to Proposed and Existing Industry'*
- EPA Publication no. 1834 *'Civil and construction, building and demolition guide'.* This publication was realised in November 2020 and replaces the following publications:
    - EPA 480 Environmental Guidelines for Major Construction Sites
    - EPA 1254 Noise control guidelines publication 1254

EPA requires a works approval applicant provide details of proposed works in relation to noise emissions and demonstrate how it will reduce noise at sensitive areas. Noise emissions from industry must be managed in accordance with EPA Publication no. 1411 '*Noise from industry in Regional Victoria*' with its objectives outlined in Part 1. The objective of the guide is to set out recommended maximum noise levels which can be applied to manage the impacts of noise on the community for industry in regional Victoria. EPA Publication no. 1854 *Civil and construction, building and demolition guide,* provides guidance on managing noise and vibration impacts during construction activities.

EPA can require a works approval applicant provide a noise impact assessment with noise emission modelling prepared in accordance with the methodology prescribed by 1411 and EPA Publication no. 1412 '*SEPP N-1 and NIRV Explanatory Notes*'.

7.3.2 Noise Emissions: The Application

GB Energy included a noise impact assessment (**NIA**) as part its WAA. The NIA draws from the EES Technical Report F: *Noise and Vibration Impact Assessment*, prepared by AECOM Australia Pty Ltd. This assessment covers key noise emissions generating activities during the construction, decommissioning, and operational phases of the Golden Beach Gas Project. Section 11 of the works

approval application details potential noise emission sources specific to the gas compressor station. This includes construction noise sources in section 11.1.1 and operation noise sources in section 11.1.2. Potential noise impacts, particularly during the construction of the pipeline, was raised by several submissions.

Best practice noise control measures are detailed in section 11.2 of the works approval application and includes the following:

- *design and construction in accordance with Section 6 of the AS 2885.1: Pipelines – gas and liquid petroleum design and construction and to achieve the intent of EPA Publication 1411.*
- *All equipment will be specified to have noise levels no greater than 85dB(A) at one metre.*
- *Compressor station piping sized to reduce noise created by process gas flow to an acceptable level.*
- *Short-term upset events may result in noise levels which exceed normal station limits.*
- *Expectation centrifugal compressor packages (including gas turbines and centrifugal compressors) will be housed in low noise enclosures with hospital grade exhaust systems.*
- *Attenuators to be installed to the exhaust of the gas turbines.*

The WAA also proposes to manage construction noise and vibration with reference to Section 2 Construction and Demolition Site Noise) of EPA Publication no. 1254 'Noise Control Guidelines' and Section 5 (Noise and vibration) of EPA Publication no. 480 'Environmental Guidelines for Major Construction Sites with an inventory of general good practice techniques to be incorporated into the plan summarised in section 11.3.1 of the works approval application.

7.3.3 Noise Emissions: Noise Modelling

The NIA was also supported by a risk assessment and modelling of noise impacts on nearest sensitive land uses through environmental noise modelling software. Noise limits for the assessment are provided in section 11.3.2 of the application. Noise limits for construction phase and operation phase are derived in accordance with EPA Publication no. 1254 and EPA Publication no. 1411 (NIRV) respectively and presented in tables 28 and 29 of the application. Construction phase night-time criteria was set as maintaining existing average background levels as the 'inaudible inside a habitable room' criterion of the guidelines was not considered practical. The operation phase noise limits included a 3 dB reduction to account for potential cumulative contributions from the nearby Longford Gas Plants.

Modelling of the operation phase was conducted for 3 scenarios, two are representative of normal and one of emergency conditions. Modelling results for both the construction and operation phase of the gas compressor station concludes compliance with the respective criteria except for one residence at 414 Sandy Camp Road, Dutson Down VIC 3851. The modelling predicted a minor exceedance of the night-time limit under the emergency operating scenario.

7.3.4 Noise Emissions: Assessment Conclusions

EPA has assessed the WAA against the noise emission assessment framework summarised above. The application and NIA have identified the site's location within regional Victoria and correctly assessed noise emissions against the applicable guideline standards. The 3 dB reduction to account

for cumulative noise impacts is considered appropriate. EPA concludes that the application and NIA have adequately demonstrated compliance with the guidelines and that the gas compressor station poses low risk of noise emission impacts on nearest sensitive receptors. The minor exceedance of noise limits was noted as during emergency scenarios and at a single residential sensitive receptor only. Accordingly, EPA has determined that the application will manage the risk of and reduce and manage noise emissions subject to works application conditions for:

- a Construction and Environment Management Plan prepared in accordance with EPA Publication no. 1834 'Civil construction, building and demolition'
    - an accompanying auditing plan to validation environmental performance during construction
- At least 30 days before the commencement of any commissioning, you must provide to EPA a report or reports that include(s):
    - A Commissioning and Auditing Plan to demonstrate how the validation environmental performance and operation of the gas compressor station will be in accordance with the application and any condition of this approval, including but not limited to compliance with (i) State Environment Protection Policy (Air Quality Management); and (ii) EPA Publication no. 1411 *'Noise from industry in Regional Victoria*'.

7.4 Water (Stormwater)

7.4.1 Water (Stormwater): Assessment Framework

- State Environment Protection Policy (Prevention and Management of Contaminated Land) (SEPP (PMCL))
- State Environment Protection Policy (Water) (SEPP (Waters))
- EPA Publication No. 1698 *'Liquid storage and handling guidelines'*
- Demonstrating Best Practice (EPA Publication no. 1517.1)

EPA requires a works approval applicant provide details of proposed stormwater management. Emissions to land or waterways must be managed in accordance with SEPP (Waters) and SEPP (PMCL) with their objectives being to protect current and future beneficial uses of land and waterways. Section 38 of the EP Act also requires that any discharge or deposit of waste into waters must comply with Policy.

Works approval applicants proposing works that may impact stormwater quality must demonstrate that waste will be contained within the site boundary and that there will be no discharge of contaminated stormwater to surface water or stormwater drains.

7.4.2 Water (Stormwater): The Application

GB Energy has detailed proposed stormwater management as part of its WAA. The details draw from the EES Technical Report K: *Surface Water Impact Assessment* prepared by AECOM Australia Pty Ltd. Details specific to the gas compressor station are provided under Section 12.1 of the works approval application. GB Energy's assessment of the topography of the area indicates that the site can sustain existing overland flow paths and runoff from hard surfaces without causing offsite

impacts. A conceptual design for the site was prepared and is presented in Figure 4. This design will undergo further development with consultation with the Wellington Shire Council.

Stormwater management for the construction phase is detailed in Section 12.1.1 and operational phase in 12.1.2. GB Energy state that mitigation measures provided in EES Technical Report K are consistent with best practice stormwater management. Mitigation measures for the construction phase will be incorporated into the Construction Environment Management Plan. The works approval application also nominates future options for managing stormwater including use of swales or a biofilter to remove sediments and nutrients.

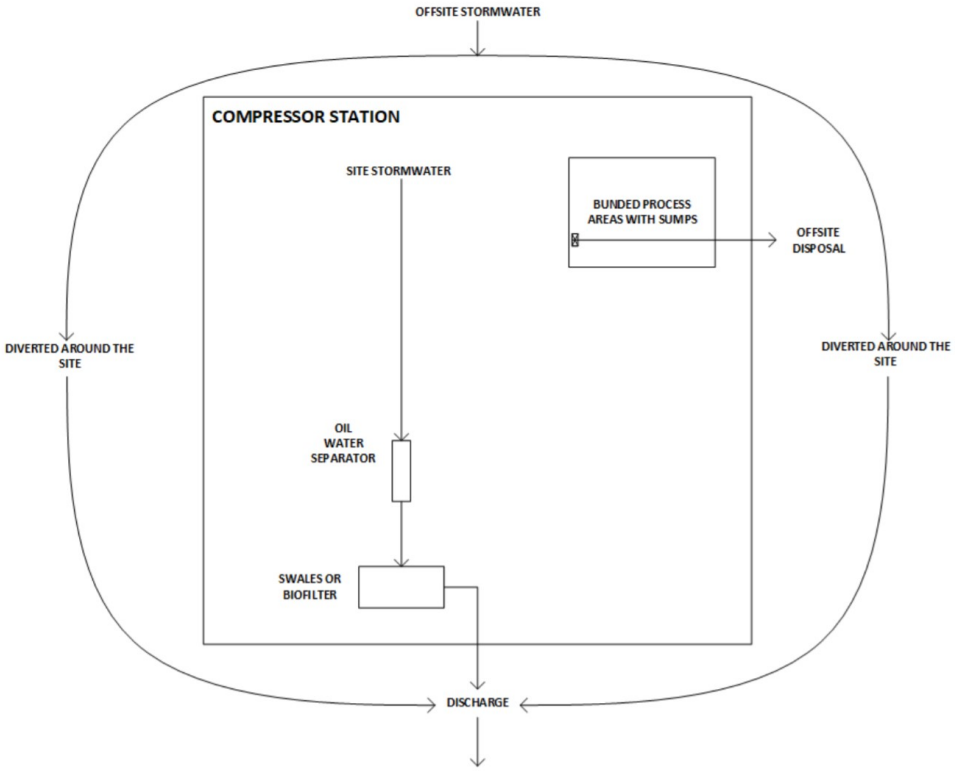

Figure 4 Site stormwater concept design (Source: GB Energy)

7.4.3 Water (Stormwater): Assessment Conclusions

EPA has assessed the WAA against the water (stormwater) assessment framework summarised above. GB Energy has identified a range of controls and procedures to prevent the contamination of stormwater and EPA considers these consistent with best practice standards. These have been informed by a EES Technical Report K and risk assessment. EPA notes the site is not subject to any planning overlays for managing water or flood ways such as the Land Subject to Inundation Overlay. EPA also notes that the West Gippsland Catchment Management Authority did not object to the works approval being issued for the gas compressor station in its submission to the EES. EPA considers the proposed concept design for stormwater management a low risk subject to a condition requiring:

- Implementation of all liquid storage containment and handling measures in accordance with EPA Publication 1698 “Liquid storage and handling guidelines”, dated June 2018.
- Before commencing construction of the following components of the works, you must provide to EPA a report or reports with the plans and specifications of those components, including details of: a Construction and Environment Management Plan prepared in accordance with EPA Publication no. 1834 ‘Civil construction, building and demolition’
    - an accompanying auditing plan to validation environmental performance during construction

7.5 Water (Wastewater)

7.5.1 Water (Wastewater): Assessment Framework

- State Environment Protection Policy (Prevention and Management of Contaminated Land) (SEPP (PMCL))
- State Environment Protection Policy (Water) (SEPP (Waters))
- EPA Publication No. 1698 *‘Liquid storage and handling guidelines’*
- EPA Publication No. 1517.1 ‘*Demonstrating Best Practice*’

EPA requires a works approval applicant provide details of proposed wastewater generation and management. Emissions to land or waterways must be managed in accordance with SEPP (Waters) and SEPP (PMCL) with their objectives being to protect current and future beneficial uses of land and waterways. Section 38 of the EP Act also requires that any discharge or deposit of waste into waters must comply with Policy.

Works approval applicants proposing works that may impact land or waterways must demonstrate that waste will be contained within the site boundary and that there will be no discharge of waste or wastewater to land or waterways.

7.5.2 Water (Wastewater): The Application

GB Energy has detailed its estimated wastewater generation in Section 12.2 of the WAA. Two streams are identified. The first is produced water for 18 months during blowdown in the production phase and the second is water removed from the wet gas process stream during the withdrawal model and typically for 5 months during winter. Both streams have an estimated rate of 122 cubic metres per month. The WAA notes that the concentration of contaminants in the produced water stream and the unknown gas reservoir water quality cannot be established until commissioning of the GBGJ. Initially, all de-gassed water will be pumped and stored in an above ground tank. The tank will be open to atmosphere, internally lined, and sized to hold approximately 1 megalitre, the maximum volume of liquid hold-up in the raw gas pipeline. This will then be trucked offsite to a suitable waste treatment facility. Future options for managing the wastewater include irrigation, treatment, and/or piping to Gippsland Water Treatment Facility, pending confirmation of contaminant levels.

7.5.3 Water (Wastewater): Assessment Conclusions

EPA has assessed the WAA against the water (wastewater) assessment framework summarised above. GB Energy has nominated potential future options for wastewater management including irrigation and further treatment. These options are not proposed under this application and have not been assessed. As a scheduled premises these options would be subject to future approval requirements if pursued. EPA considers the proposed onsite storage pending offsite management a low risk option for wastewater management subject to a condition requiring:

- implementation of all liquid storage containment and handling measures in accordance with EPA Publication 1698 “Liquid storage and handling guidelines”
- Before commencing construction of the following components of the works, you must provide to EPA a report or reports with the plans and specifications of those components, including details of: a Construction and Environment Management Plan prepared in accordance with EPA Publication no. 1834 ‘Civil construction, building and demolition’
    - an accompanying auditing plan to validation environmental performance during construction

7.6 Land and groundwater

7.6.1 Land and Groundwater: Assessment Framework

- State Environment Protection Policy (Prevention and Management of Contaminated Land) (SEPP (PMCL))
- State Environment Protection Policy (Water) (SEPP (Waters))
- Liquid storage and handling guidelines (EPA Publication no. 1698)
- IRWG655.1 *Acid Sulfate Soil and Rock*
- Demonstrating Best Practice (EPA Publication no. 1517.1)

EPA requires a works approval applicant provide details of its activities that may impact on land and groundwater. Potential discharge of waste to land must be managed in accordance with SEPP (PMCL) with its objectives being to prevent contamination and protect current and future beneficial uses of land. Works approval applicant’s proposing works that may result in a potential discharge of waste to land must demonstrate compliance with the following critical Clause of the Policy:

- Clause 17: any person within the policy area involved in the transport, storage, or handling of any chemical substance or waste must applying best practice, complying with any industrial waste management policy or relevant dangerous good legislation, and have regard to any guidance document approved by EPA.

EPA does not require a works approval applicant provide a land and groundwater impact assessment if the proposal does not involve an underground storage of petroleum, pipeline transfer station, groundwater extraction, or injection of waste to groundwater. The WAA does not propose any of these works.

7.6.2 Land and Groundwater: The Application

GB Energy included an assessment of potential land and groundwater issues as part of its works approval application. The assessment in the application draws from the EES Technical Report D: *Contamination and acid sulfate soils Impact Assessment* and EES Technical Report G: *Groundwater Impact Assessment*, both prepared by AECOM Australia Pty Ltd. Section 13 of the works approval application details land groundwater issues specific to the gas compressor station. This includes identification of beneficial uses, existing land and groundwater conditions, liquid management storage, such as fuel and chemical storage, disturbance and inappropriate management of acid sulfate soils, and waste management.

The WAA estimates that 15,000 cubic metres of acid sulfate soils will be disturbed during the GBGP's construction phase. Preliminary investigations indicate the likelihood of encountering acid sulfate soils is in areas near Lake Reeve. GB Energy considers there is a low likelihood of encountering or disturbing acid sulfate soils gas compressor station construction area.

The application details best practice measures to be adopted by in Section 13.1.4 of the WAA. This includes identification of relevant policies and standards. The WAA also acknowledges the need for an acid sulfate soil management plan prepared to the satisfaction of EPA and in line with requirements of EPA Publication no. IRWG655.1 *Acid Sulfate Soil and Rock*.

7.6.3 Land and Groundwater: Assessment Conclusions

EPA has assessed the WAA against the land and groundwater assessment framework summarised above. EPA considers that WAA has included adequate identification of potential sources of land and groundwater contamination and best practice mitigation measures proposed to manage these risks. EPA considers the proposed gas compressor station is unlikely to cause land and groundwater contamination subject to works application conditions for:

- Before commencing construction of the following components of the works, you must provide to EPA a report or reports with the plans and specifications of those components, including details of:
    - a Baseline Conditions Report to determine the presence of any soil or land contamination or the presence of acid sulfate soils at the premises and its boundary
    - a Construction and Environment Management Plan prepared in accordance with EPA Publication no. 1834 'Civil construction, building and demolition'
        - an accompanying auditing plan to validation environmental performance during construction
- if the presence of acid sulfate soils is identified in the Baseline Conditions Report, an Acid Sulfate Soil Management Plan prepared in accordance with EPA Publication no. 655.1 'Acid sulfate soil and rock'
- implementation of all liquid storage containment and handling measures in accordance with EPA Publication 1698 "Liquid storage and handling guidelines"

7.7 Environmental management

7.7.1 Environmental Management: Assessment Framework

- EPA Publication No. 1695.1 '*Assessing and controlling risk: A guide for business'*

EPA requires a works approval applicant provide details of environmental impacts under upset or non-routine operating conditions and considers precautionary measures to prevent or minimise unexpected environmental impacts.

7.7.2 Environmental Management: The Application

GB Energy detailed proposed environmental management in section 15 of the works approval application. GB Energy states that it has conducted qualitative and quantitative safety, hazards, and risks assessments for proposal and will do so on an ongoing basis as part of an iterative process. A preliminary hazard identification (HAZIP) workshop and a design Hazard and Operability (HAZOP) study in the Front End Engineering and Design phase. The HAZOP recommendation closeout report was attached as Appendix F.

From the studies conducted to date, GB Energy has identified a list of risks during non-routine operations. The following risk management measures are proposed or acknowledged:

- the gas compressor station will be designed, constructed and managed in accordance with AS 2885.1: *Pipelines – gas and liquid petroleum design and construction.*
- the gas compressor station will be constructed and operated in accordance with an Energy Safe Victoria approved Construction Safety Management Plan and Operational Safety Management Plan.
- the gas compressor station will be constructed and operated in accordance with a Safety Management Plan and Environmental Management Plan, which are required to be submitted and accepted by both ESV and the Minister for Energy, Environment and Climate Change.
- Construction of the gas compressor station will be managed in accordance with an approved Construction Environmental Management Plan (CEMP). Requirements within the CEMP will include mitigation measures from the Environmental Management Framework established as part of the EES process.
- Operation of the gas compressor station will be managed in accordance with the approved Operation Environmental Management Plan (OEMP). Requirements within the OEMP will include mitigation measures from the Environmental Management Framework established as part of the EES process.
- The gas compressor station will operation in accordance with a monitoring program developed to ensure compliance with conditions of statutory approvals including EPA works approvals and licence.

7.7.3 Environmental Management: Assessment Conclusions

EPA has assessed the WAA against the environmental risk management assessment framework summarised above. EPA is satisfied that the WAA has taken adequate consideration of potential

and residual environmental risks to arise from operating the facility including upset or other than normal operating conditions subject to the following conditions:

- a Construction and Environment Management Plan prepared in accordance with EPA Publication no. 1834 'Civil construction, building and demolition';
- final detailed design of the gas compressor station demonstrating implementation of:
    - best practice management for energy efficiency and the minimisation of greenhouse gas emissions, noise, and visible emissions
    - an accompanying air and greenhouse gas emission monitoring program including methods for analysing the amount and frequency of emissions during uncontrolled venting
    - findings of a hazard and operability study that considers all process and environmental risks for operation (normal and other than normal operating conditions);
- A summary report of the gas compressor station's Environmental Management System (EMS).

8 EPA'S CONSIDERATION OF THE MINISTER'S ASSESSMENT OF THE EES

Table 8: Specific recommendations relevant to the works approval application

Inquiry recommendation	Minister's summary response	EPA's consideration of the Minister's response
Include a condition in the works approval requiring further investigation of the presence of any soil contamination or acid sulfate soils to the satisfaction of the Environment Protection Authority prior to the commencement of construction of the compressor station.	Generally supported.	EPA's assessment is consistent with or concurs with this recommendation. Relevant requirements have been incorporated into condition WA_W1(a).
Include a condition in the works approval for the compressor station requiring a report(s) from a suitably qualified person, which is independently verified, demonstrating that: (a) the detailed design for the compressor station optimises its energy efficiency and minimises its greenhouse gas emissions, consistent with best practice (b) the compressor station meets applicable greenhouse gas emission performance objectives, standards or requirements under applicable legislation or legislative instruments	Generally supported.	EPA's assessment is consistent with or concurs with this recommendation. Relevant requirements have been incorporated into works approvals conditions including WA_W1(a) and (b) and recommended licence conditions presented in Table 10.
Include conditions in the discharge licence for the compressor station that require: a) monitoring and	Generally supported.	EPA's assessment is consistent with or concurs with this recommendation. Relevant requirements have

independent auditing of greenhouse gas emissions from operation of the facility b) on-going implementation of best practice measures to mitigate greenhouse gas emissions, to the extent reasonably practicable		been incorporated into works approval conditions including WA_W1(e) and WA_R1 and recommended licence conditions presented in Table 10.
Include a condition in the works approval requiring an Environmental Management Plan for the construction and operation of the compressor station to be prepared to the satisfaction of the Environment Protection Authority.	Generally supported.	EPA's assessment is consistent with or concurs with this recommendation. Requirements have been incorporated into WA_R1(b).
Include conditions in the works approval that require: a) environmental management systems to be prepared and implemented that are consistent with those for other elements of the Project b) audits of environmental performance and compliance to be conducted by a suitably qualified person approved by the relevant regulator. Scope and timing of audits should be approved by the relevant regulator c) maintenance and review of an environmental risk register.	Generally supported. It is the Minister's recommendation that the audit reports on environmental performance and compliance be published on the proponent's website.	EPA's assessment is consistent with or concurs with this recommendation. Requirements have been incorporated into works approval conditions including WA_R1(a) and recommended licence conditions presented in Table 10.

9 RECOMMENDATION

Based on an integrated assessment of the key issues in Sections 5-8 above, it is recommended that the Authority:

ISSUE GB ENERGY (VIC) PTY LIMITED **WORKS APPROVAL** for the gas compressor station at the premises of SANDY CAMP ROAD, DUTSON VIC 3851 **PURSUANT TO** section 19B(7) of the *Environment Protection Act 1970,* subject to the following conditions:

Table 9 Recommended works approval conditions

Condition code	Condition
WA_G1	Subject to the following conditions, this approval allows the construction of the following works and associated equipment – a gas compressor station and associated equipment including up to four 5-megawatt gas-fired turbine driven centrifugal compressors and a low-pressure flare.
WA_G2	The works must be constructed in accordance with the application accepted on 8 September 2020 ("the application") except that, in the event of any inconsistency arising between the application and the conditions of this approval, the conditions of this approval shall apply.
WA_G4	This approval expires: (a) on the issue or amendment of a licence relating to all works covered by this approval; (b) when EPA advises in writing that all works covered by this approval have been satisfactorily completed and no licence is required; or c) two years from the date of issue unless the works have been commenced by that date to the satisfaction of EPA.
WA_W1	Before commencing construction of the following components of the works, you must provide to EPA a report or reports with the plans and specifications of those components, including details of: (a) a Baseline Conditions Report to determine the presence of any soil or land contamination or the presence of acid sulfate soils at the premises and its boundary; (b) final detailed design of the gas compressor station demonstrating implementation of: a. best practice management for energy efficiency and the minimisation of greenhouse gas emissions, noise, and visible emissions b. an accompanying air and greenhouse gas emission monitoring program including methods for analysing the amount and frequency of emissions during uncontrolled venting

c. findings of a hazard and operability study that considers all process and environmental risks for operation (normal and other than normal operating conditions);

(c) a Construction and Environment Management Plan prepared in accordance with EPA Publication no. 1834 'Civil construction, building and demolition'

a. an accompanying auditing plan to validation environmental performance during construction

(d) if the presence of acid sulfate soils is identified in the Baseline Conditions Report, an Acid Sulfate Soil Management Plan prepared in accordance with EPA Publication no. 655.1 'Acid sulfate soil and rock'

(e) A plan for annual reporting of greenhouse gas emissions during the construction and operational phases of the facility.

WA_W2	You must not commence construction of those parts of the works for which reports are required by condition WA_W1 until written EPA approval of those reports has been received.
WA_W3	Where any reports specified in condition WA_W1 and approved by EPA differ from the application, the works must be constructed in accordance with those approved reports.
WA_W4	You must notify EPA when the construction of the works covered by this approval has been commenced.
WA_W5	You must notify EPA when the construction of the works covered by this approval has been completed.
WA_W7	You must not commission or operate the works without the written approval of EPA.
WA_W12	You must install all exhaust stacks so that provisions for sampling are included in accordance with EPA Publication 440.1 "A Guide to the Sampling and Analysis of Air Emissions and Air Quality", as amended from time to time.
WA_W13	You must implement all liquid storage containment and handling measures in accordance with EPA Publication 1698 "Liquid storage and handling guidelines", dated June 2018.
WA_W16	During construction, stormwater discharged from the premises must not be contaminated with waste.
WA_W18	During construction, you must undertake an environmental monitoring program that enables you and EPA to determine compliance with condition(s) WA_W15,

	and the Construction Environment Management Plan. The environmental monitoring program must be approved by EPA.
W_R1	At least 30 days before the commencement of any commissioning, you must provide to EPA a report or reports that include(s): (a) A Commissioning and auditing plan to demonstrate how the validation environmental performance and operation of the gas compressor station will be in accordance with the application and any condition of this approval, including but not limited to compliance with (i) State Environment Protection Policy (Air Quality Management); and (ii) EPA Publication no. 1411 *'Noise from industry in Regional Victoria'*; (b) A summary report of the gas compressor station's Environmental Management System (EMS); and (c) a report demonstrating completion of all works in accordance with the application (as defined in WA_G2) and each condition of this approval
WA_R5	You must not commence operation of the works until written EPA approval of the reports required by condition(s) WA_R1 has been received.

Table 10 Recommended licence conditions*

Condition code	Condition
LI_G1	You must ensure that waste is not discharged, emitted or deposited beyond the boundaries of the premises except in accordance with this licence or under the Act.
LI_G2	You must immediately notify EPA of non-compliance with any condition of this licence by calling 1300 EPA VIC (1300 372 842), sending an email to contact@epa.vic.gov.au, or using the EPA Interaction Portal.
L1_G3	By 30 September each year you must submit an annual performance statement to EPA for the previous financial year in accordance with the Annual Performance Statement Guidelines (EPA Publication 1320.3, released June 2011).
LI_G4	Documents and monitoring records used for preparation of the annual performance statement must be retained at the premises for five years from the date of each statement, and be able to be immediately produced upon request by an officer of the Authority.
LI_G5	You must establish and implement a risk-based monitoring program that enables you and EPA to determine compliance with each condition of this licence. The monitoring program must comply with the requirements of the monitoring guidelines (EPA document 1321.2, released June 2011).

WA_G4	Documents and monitoring records used for preparation of the annual performance statement must be retained at the premises for five years from the date of each statement, and be able to be immediately produced upon request by an officer of the Authority.
Recommended condition 1	A suitably worded condition specifying final air emission discharge limits to be determined through a commissioning monitoring program
Recommended condition 2	A suitably worded condition requiring auditing regular or yearly auditing of GHG emissions from operation of the gas compressor station
Recommended condition 3	A suitably worded condition requiring regular review of best practice measures to mitigate GHG emissions
Recommended condition 4	A suitably worded condition requiring regular environmental performance and compliance audits
Recommended condition 5	A suitably worded condition requiring publication of environmental performance and compliance audits

***Table 10 reflect standard licence conditions for L01 (General emissions to air) scheduled premises. From 1 July 2021, the new Environment Protection Act 2017 comes into force. EPA is currently undergoing a review of its licence conditions to ensure compatibility with the requirements of the new Act. These and all new recommended conditions are subject to necessary revision.**

REPORT DATE

Date: 6 May 2021