PART 1 PROPONENT DETAILS, PROJECT DESCRIPTION & LOCATION

1. Information on proponent and person making Referral

Name of Proponent:	Shaw River Power Station Pty Ltd
Authorised person for proponent: **Position:** **Postal address:** **Email address:** **Phone number:** **Facsimile number:**	Ken Spicer Project Development Manager, Shaw River Power Station Project Level 14, 60 Edward Street, Brisbane, Qld, 4000 ken.spicer@santos.com (07) 3228 6606 (07) 3228 6688
Person who prepared Referral: **Position:** **Organisation:** **Postal address:** **Email address:** **Phone number:** **Facsimile number:**	Barton Napier Principal Coffey Natural Systems Pty Ltd 126 Trenerry Crescent, Abbotsford, Vic. 3067 barton_napier@coffey.com (03) 9418 0600 (03) 9418 0650
Available industry & environmental expertise: (areas of 'in-house' expertise & consultancy firms engaged for project)	Shaw River Power Station Pty Ltd is a wholly owned subsidiary of Santos Ltd. Santos has extensive experience in the design, construction and operation of gas pipelines. It also has in-house environmental specialists to oversee the environmental approvals process and consultation program. Coffey Natural Systems Pty Ltd – Environmental approvals Connell Wagner – Power station design Kellogg Brown and Root (KBR) – Pipeline design JTA Australia – Community consultation and stakeholder engagement

2. Project – brief outline

Project title: Shaw River Power Station Project

Project location:

The indicative location of the proposed project (power station and associated pipeline and other infrastructure) is given in Figure 1. Figure 2 shows the proposed power station site. The approximate project component coordinates are given in Table 1 below.

Table 1 Coordinates of key project facilities (refer to Figure 2 for point labels)

Facility	Easting (AMG zone 54)	Northing (AMG zone 54)	Latitude	Longitude
Power Station site:				
Point no.				
0	595585.55	5774083.09	-38° 10' 33.51"	142° 5' 28.78"
1	597337.47	5774070.04	-38° 10' 33.26"	142° 6' 40.90"
2	597595.50	5774484.20	-38° 10' 19.73"	142° 6' 51.25"
3	587916.71	5776169.49	-38° 10' 4.64"	142° 6' 48.90"
4	600581.76	5777135.66	-38° 10' 4.54"	142° 7' 40.77"
5	598789.83	5773187.98	-38° 11' 1.31"	142° 7' 40.95"
6	595575.45	5773225.36	-38° 11' 1.34"	142° 5' 28.95"
Gas Pipeline*				
Connection to the Lara to Iona Pipeline**	678300.0	5729051.4	-38˚ 34' 8.82"	143˚ 2' 47.88"
Entrance to power station site	598794.3	5773347.8	38˚ 10' 56.57"	142˚ 7' 40.93"
Water Supply Pipeline** Options for water supply are currently being investigated. At this stage, the most likely option is for water to be supplied via a pipeline, to be constructed and operated by Wannon Water, from the Port Fairy Water Reclamation Plant.				

*The exact position of compressor station and midline valve are yet to be determined and coordinates are not given here. Approximate location of these facilities is given in Figure 1.
**The location of any water supply pipeline has not yet been determined.

Short project description:

Shaw River Power Station Pty Ltd, a wholly-owned subsidiary of Santos Ltd (Santos), proposes to develop a nominal 1,500 MW natural-gas-fired, combined cycle gas turbine (CCGT) power station in western Victoria near the town of Orford, approximately 30 km north of Port Fairy. The proposed power station is an intermediate load generator but will operate as a baseload generator for extended periods of time. The power station is likely to be developed in three stages, each with a nominal capacity of 500 MW. The stages will be developed progressively, probably over a 10-year period but subject to market demand. The output of the power station will be dependant on market requirements for electricity or gas at any given time.

Gas will be supplied to the power station from Santos' equity gas reserves in the Gippsland and Otway basins, or any other gas reserve that Santos may draw from, via a new high pressure gas pipeline from the Australian Pipeline Trust (APA) (GasNet) Lara to Iona Pipeline (South West Pipeline). The new pipeline is proposed to run from its connection with the South West Pipeline

northeast of the Otway gas plant, for approximately 100 km to the proposed power station.

The power station will be connected to the Victorian electricity grid by connection to the Moorabool–Portland 500 kV overhead transmission line (OHTL) via a new switchyard contained within the site boundary of the proposed power station site.

Water supply options are still being investigated, but at this stage the most likely option is for Santos to contract with Wannon Water to construct and operate a water supply pipeline from the Port Fairy water reclamation plant (WRP) to the power station site at Orford.

3. Project description

Aim/objectives of the project:

Energy demand in Victoria is seasonal with higher demand for electricity in the summer months and increased demand for gas in the winter months.

The Shaw River Power Station Project provides Santos with flexibility to supply either electricity or gas to meet demand. At times of high electricity demand, the intermediate-base load generator will be capable of increasing output to meet the demand, whereas in times of high gas demand the generation capacity will be capable of being reduced to meet the demand for gas.

The proposed development enables Santos to maximise the efficient use of its gas reserves in the Gippsland and Otway basins.

Background/rationale of project:

The most recent annual Statement of Opportunities prepared by the National Electricity Market Management Company (NEMMCO) predicts that the electricity supply-demand balance for Victoria and South Australia will fall below the Reliability Standard (the level at which 99.998% of electricity demand can be met) in the summer of 2010/2011 (NEMMCO, 2007). The forecast shortfall in installed generating capacity creates an opportunity for new entrants to enter the market. Santos proposes to take advantage of this opportunity to develop a gas-fired power station, as it has the added advantage of enhancing the value of its Gippsland and Otway basin gas reserves.

The Project responds to the Victorian Government's policy that gas is widely seen as playing a significant role in providing a secure energy supply source, as gas produces significantly lower greenhouse gas emissions, is more competitive than renewable energy and has sufficient flexibility to fuel large base load power stations[1]. The proposed development also fulfils other Victorian Government policy objectives including those relating to regional development and employment and water reuse[2].

Santos has strategically chosen western Victoria as the region in which to develop the power station in order to locate generation closer to the main electricity consumption or load centres of Melbourne/Geelong, Adelaide and Portland. In this way, line losses from the transmission of electricity over long distances to any of these load centres is reduced. The detailed siting of the proposed power station has been made primarily with reference to proximity to the Moorabool–Portland 500 kV OHTL (to further reduce line losses), as well as the feasibility of supplying natural gas to the power station via the construction of a new pipeline (see Section 4 below for a more detailed explanation of siting).

Main components of the project:

Power Station

The power station is proposed to be a nominal 1,500 MW CCGT power station. At this stage Santos proposes to build the power station in three phases, scaling from an initial 500 MW in 2012 to 1,000 MW by 2017 and then 1,500 MW by 2022. This EES referral is for the planned total installed capacity of 1,500 MW.

The power station is proposed to be based on high efficiency, modern combustion gas turbine driven generator sets. The generator set is at this stage intended to be configured as a single shaft, combined cycle arrangement, comprising of a 1+1 configuration (one gas turbine + one steam turbine), a heat recovery steam generator (HRSG), a generator and a generator transformer. This will be scaled to three sets (units) to achieve the nominal 1,500 MW capacity. These components will be housed in a series of buildings and structures.

The power station will utilise a dry cooling system to minimise water consumption. This is likely to consist of an air-cooled condenser for steam cycle heat rejection and a dry-type, fin-fan cooler for

[1] Energy for Victoria – A Statement by Minister for Energy and Resources (2002) Department of Natural Resources and Environment p36.

[2] Victorian Government White Paper – *Securing our water future together, our water our future, Chapter 5.*

plant auxiliaries.

Approximately 900 L/day of fresh water will be required for use by power station employees and contractors. Santos is currently investigating options for the supply of potable water to the site. These options include rainwater tanks and disinfection at the site, trucking in of potable water or a new pipeline laid in the same trench as the process water pipeline.

The design life of the power station is at least 25 years, with the design allowing for high levels of automation so that it can be operated using minimum manning whilst remaining safe and fully operable across its full range of capabilities. The design also permits a high level of redundancy of equipment such that the failure of a single item of auxiliary equipment will not result in a loss of generation.

In addition, the following items are proposed to be contained within the power station site:

Gas supply, auxiliary firing and emergency generation infrastructure
- Gas conditioning station.
- Auxiliary boiler (if required).
- Emergency diesel generator.
- Diesel tank.

Power station cooling infrastructure
- Air cooled condenser.
- Auxiliary dry cooling system.

Administration, amenities, security and materials storage infrastructure
- Security gatehouse.
- Car park.
- Workshop / stores building.
- Administration building.
- Controls building.
- Chemical unloading and storage area.

Water supply and wastewater disposal infrastructure
- Raw water tanks – to store the recycled water supplied by Wannon Water.
- Fire pump house.
- Water treatment plant.
- Neutralisation basin.
- Demineralised water tank.
- Potable water tank.
- Wastewater collection area.
- Triple-interceptor or gross pollutant traps.
- Sedimentation pond.

Switchyard and ancillary infrastructure
- 500 kV switchyard.
- Switchyard control building.
- Internal electricity network and supply.

A preliminary power station site layout drawing is given in Figure 3, showing the proposed location of the power station and switchyard. The final layout of the power station will be determined by Santos and its design consultants on the basis of detailed environmental investigations and stakeholder consultation.

<u>Gas Pipeline, including compressor station</u>
The proposed pipeline will supply gas to the power station from the APA (GasNet) Lara to Iona Pipeline. The proposed connection point to the pipeline is northeast of the Otway Gas Plant. The preliminary pipeline route and associated infrastructure is shown on Figure 1.

The length of the underground gas pipeline will be approximately 105 km. The preliminary pipeline route generally follows the SEAGas Pipeline from the Iona Gas Plant for approximately

21 km before diverging to the north of the SEAGas and Western Pipelines for approximately 41 km. It rejoins these pipelines in the vicinity of Merri River and follows them for a short distance before following the Western Pipeline for 24 km to east of the Moyne River. The final 14 km of the route runs in a northwesterly direction from the Western Pipeline to the Shaw River Power Station site on Riordans Road, Orford. The proposed nominal diameter of the pipeline is 500 mm and it has been designed for a maximum allowable operating pressure (MAOP) of 15,300 kPa. If the Front End Engineering and Design (FEED) study determines that a different size pipeline is required to supply gas to the power station at the required volumes and rate, this will be addressed in advance of seeking a pipeline licence for the pipeline.

The aboveground facilities will include:

- Inlet metering station near the connection to the Lara to Iona Pipeline.
- Compressor station, at this stage proposed at a location approximately 6 km from Iona (see Figure 1 for approximate location).
- Midline valve, at this stage proposed at a location halfway between the compressor station and the power station (see Figure 1 for approximate location).
- Metering/regulator station at the Shaw River Power Station site.

The inlet meter will contain a pigging station, gas chromatography, filter/coalescers, metering skid and regulators, and will be contained in a security fenced enclosure of approximately 60 m by 65 m.

The compressor station is at this stage proposed to be situated approximately 6 km west of the connection of the pipeline to the APA (GasNet) Lara to Iona Pipeline, on land to be purchased by Santos for the purpose. The compressor is proposed to be a centrifugal compressor, driven by an approximately 4.6 MW, gas-fired turbine or an electric drive. The compressor station compound will also contain inlet gas filtering and gas quality monitoring equipment, as well as a scraper receiver/launcher station. A building containing control equipment and office facilities for operation staff as well as fire water storage, if required, will also be included in the compressor station enclosure. The approximate size of the enclosure will be 130 m by 185 m, an area of approximately 2.4 ha.

A remotely operated midline isolation valve is at this stage proposed to be situated approximately half way between the compressor station and the power station as shown on Figure 1. It will comprise an underground, in-line valve, with aboveground valve actuator, bypass, removable stack and telemetry equipment. The aboveground component will be fenced in an enclosure measuring approximately 45 m by 20 m.

At the power station a meter/regulator and gas conditioning station will be installed upstream of the delivery point. This will be contained within the power station site boundary and will include a pigging station, gas chromatography, filter/coalescers, metering skid and heaters.

The pipeline will be located in an easement, which will generally be about 25m wide, in such a way as to provide space for a future pipeline. It is proposed that, where the route is parallel to other pipelines, the easement will abut existing easements. It is anticipated that there will be a minimum 1.2 m cover over the pipe, except in areas classified as continuous rock by AS 2885.1, where less cover may be used.

<u>Water supply</u>

The power station will require considerable volumes of water for operation and options for this supply are currently being investigated.

At this stage, the most likely option is the use of wastewater from the Port Fairy Water Reclamation Plant. If this water supply option is adopted, a pipeline will need to be developed to convey the water to the power station site (and potentially to other users). It is anticipated that Wannon Water would construct and operate this pipeline with Santos taking delivery at the power station gate. The route of this water pipeline is yet to be determined, but is anticipated to generally follow the Hamilton - Port Fairy Road (C184) from Port Fairy to Orford.

Ancillary components of the project:

Riordans Road from Hamilton – Port Fairy Road (C184) to the power station entrance will require upgrading including the replacement of the culvert over Shaw River. Access roads/tracks to the power station, compressor station and South West Pipeline connection will need to be constructed from Riordans Road, Smokey Point Road and Waarre Road respectively.

An investigation is being undertaken to identify an overdimensional load route to the power station site. The outcome of which will determine whether roads, culverts and bridges require upgrading to cater for the transport of heavy equipment during construction and maintenance.

Construction camps will be required for both the power station and gas pipeline construction. The location of and number of construction camps is yet to be determined.

Key construction activities:

Key construction activities are outlined below:

Power Station

- Erection of security fence around power station site to prohibit unauthorised access.
- Upgrade of Riordans Road from Hamilton – Port Fairy Road to power station entrance.
- Construction of power station access road.
- Bridge and road upgrades as required for overdimensional load route.
- Removal and stockpiling of topsoil for reuse in landscaping and rehabilitation of temporary work sites.
- Construction of site drainage and water management systems including perimeter drains, oil interceptors and sedimentation ponds.
- Bulk earthworks to construct the power station and switchyard benches using onsite resources.
- Transport of plant and parts to the site and stockpiling at the site.
- Construction of power station and switchyard foundations.
- Construction of switchyard infrastructure and installation of switchyard equipment.
- Construction of power station, including gas turbine, HSRG, generator set, auxiliary firing plant, stack and ancillary infrastructure (balance of plant).
- Connection of power station services e.g., water supply and wastewater disposal systems, electricity and gas supplies.
- Connection of switchyard to power station electrical systems and to Moorabool–Portland 500 kV to OHTL.
- Commissioning of switchyard and power station.
- Reinstatement and rehabilitation of temporary work sites.
- Landscaping.

It is anticipated that construction of the initial stage of the power station will take approximately two years, including site enabling works. At the peak of construction activities, the construction workforce will total approximately 600 people. Expansion of the power station to its total 1,500 MW capacity will occur in two subsequent stages at approximately five year intervals. A smaller workforce will be required for subsequent stages, as the major civil works will be completed during the initial construction stage.

Gas Pipeline, including compressor station

- Set out (by survey) of pipeline alignment and installation of fencing.
- Transport of pipelaying spread equipment and materials to site. A pipelaying spread includes plant and equipment for clearing the right of way or easement, trenching, welding and testing pipe, laying pipe, backfilling the trench and reinstating and rehabilitating the easement.
- Vegetation removal and topsoil stripping and stockpiling.
- Excavation of the trench using a trenching machine, excavator or drill and blast method.
- Pipe preparation, including stringing of pipe, bending of pipe where required, grit blasting to remove corrosion along weld margins, welding, non-destructive testing (NDT) of welds and coating of pipe ends.
- Placement of bedding material and laying pipe in trench.
- Backfill of trench including compaction of backfill to minimise slumping.
- Reinstatement of natural contours and rehabilitation of construction right of way.

- Marker post installation.
- Testing including pressure or hydrostatic testing and leak testing.
- Cleaning and drying of pipeline using pigs.
- Construction of compressor station, metering stations and midline valve including clearing of site, civil works and erection of infrastructure including power facilities and connections if applicable.
- Commissioning.

All crossings (road, river, pipeline, rail and high voltage transmission lines) will be individually designed in accordance with AS 2885.1. It is assumed that all arterial road, highway, railway and major watercourse crossings will be constructed using either horizontal directional drilling (HDD) or horizontal boring, and that all other crossings will be done using open cut construction methods unless it is prudent to use HDD or horizontal boring (such as for preservation of remnant vegetation).

Construction of the pipeline will preferably be carried out in late spring, summer and early autumn with an overall duration of approximately 26 weeks. The construction workforce will total approximately 130 people.

Recycled water pipeline (to be constructed and operated by Wannon Water)

- Set out (by survey) of pipeline alignment and installation of access gates and any temporary fencing.
- Vegetation removal and topsoil stripping and stockpiling.
- Excavation of the trench using an excavator.
- Placement of bedding material and laying pipe in trench.
- Backfill of trench including compaction of backfill to minimise slumping.
- Reinstatement of natural contours and rehabilitation of construction right of way.
- Marker post installation.
- Testing including pressure and leak testing.
- Construction of ancillary equipment including pump station, microfiltration and reverse osmosis treatment works at the Port Fairy WRP.

The expected duration of the water pipeline construction is 14 to 26 weeks and it is anticipated that it will be carried out in late spring, summer and /or early autumn.

Key operational activities:

Power Station

The power station is proposed to operate 24 hours a day, 7 days a week. Staff will be required for management, operations and ongoing maintenance. Minor maintenance will involve replacing valves, overhauling pumps and replacing electrical equipment. Major maintenance will be scheduled taking into account the results of inspections that will be periodically carried out as required by relevant standards.

The major raw materials (natural gas and water) and products (electricity) will be imported and exported through fixed infrastructure (pipelines and transmission lines), with the exception of the disposal of concentrated wastewater produced by the power station. It is anticipated that the brine solution would be stored temporarily on site and then trucked to the Warrnambool Wastewater Treatment Plant for treatment. Conservative estimates (based on the power station operating at the maximum capacity of 1,500 MW) indicate that a maximum of two 30,000 L tankers a day would be required for the transport of brine solution.

Gas Pipeline, including compressor station

Pipeline operation will involve the management and control of the equipment at each station, monitoring the process conditions and corrosion protection equipment along the pipeline, and coordinating pipeline patrol and maintenance activities. Pipeline maintenance involves the physical maintenance of the pipeline equipment and includes integrity management activities, procedural methods for external interference protection and regulatory reporting. Physical maintenance activities are proposed to be undertaken on a monthly, 6-monthly and 12-monthly planned basis. Pipeline operation and maintenance activities are continuous and require the attendance of an operator at the pipeline control centre (which is likely to be located either at the power station or at Iona gas plant).

Periodic minor maintenance of the compressor station will be required, and major maintenance will be undertaken following the results of inspections carried out according to the relevant standards and at defined manufacturer-defined intervals.

Water Pipeline
An option being considered for a power station water supply is the use of treated effluent from the Port Fairy WRP. The treated effluent would be conveyed to the power station site by a pipeline to be constructed, owned and operated by Wannon Water. It is likely the effluent would undergo preliminary treatment at the Port Fairy WRP before being pumped to the power station. Reuse of wastewater would reduce discharges from the Port Fairy WRP to the Southern Ocean via the existing ocean outfall. The wastewater would require further treatment (polishing to boiler feed water quality) at the power station before it can be used in the power station steam system.

Key decommissioning activities:

Power Station
The power station will be decommissioned in accordance with guidelines and standards applicable at the time. Typically, all serviceable items are sold or reused and the remaining plant and equipment demolished and, if possible, recycled. Any material that cannot be reused or recycled will be disposed of at a licensed landfill facility.

After the plant and equipment has been removed, any contamination will be remediated and the site levelled and revegetated so that it is left in a stable, self-sustaining condition. It is anticipated that, as a minimum, the site would be rehabilitated to a state suitable for grazing.

The switchyard and new transmission towers would remain in place and their operation and maintenance would be the responsibility of the transmission network provider as part of the 'shared network'.

Gas Pipeline, including compressor station
The pipeline has a design life of 60 years. At the time of decommissioning, it will be comprehensively tested to ascertain if it can continue to operate and interest in the gas pipeline will be canvassed. If the pipeline is no longer required, it will be decommissioned in accordance with AS 2885 (or any subsequent Australian Standard in force at the time of decommissioning) and best practice. This will require the pipeline to be purged of gas, sealed and stabilised. At this stage, it is proposed that all above ground facilities e.g., meter stations, scraper facilities, compressor stations, will be removed and the sites rehabilitated to a standard suitable for grazing.

Water Pipeline
It is anticipated the water supply pipeline would have a design life of about 50 years. It is expected the pipeline would be decommissioned in accordance with Wannon Water practices and any applicable Australian Standard in force at the time of decommissioning.

Is the project an element or stage in a larger project?

☒ No ☐ Yes

The power station, pipeline and associated infrastructure have been designed to allow for an initial 500 MW operating capacity, with expansion to 1,500 MW over ten years (subject to demand). This EES referral is for the maximum 1,500 MW capacity.

Is the project related to any other past, current or mooted proposals in the region?

☒ No ☐ Yes

The proposed development is not part of or contingent on any other activities Santos is conducting in the Gippsland and Otway basins.

4. Project alternatives

FiBrief description of key alternatives considered to date:

Power Station

Locational alternatives
In order to identify potential power station sites, a constraints analysis was undertaken using a geographic information system (GIS) within a 5 km corridor either side of the Moorabool–Portland 500 kV OHTL. The analysis considered the aims of the project, the location of the site in Western Victoria, and operational requirements. The criteria used in this analysis included land use, planning, proximity of potential sites to buildings/residences, biodiversity conservation, surficial geology (constructability issues associated with the Stony Rises in the areas of interest was particularly pertinent) and proximity to water bodies.

The analysis identified ten locations along the Moorabool–Portland 500 kV OHTL that warranted consideration. After field investigations and more detailed assessment, two sites located near Darlington and Orford were chosen for further analysis. Ultimately, the site near Orford was nominated as the preferred site, primarily due to water supply considerations, as it allowed for the possibility of using wastewater from the Port Fairy WRP as process water for the power station.

Design alternatives
An open cycle gas turbine system was considered for use in the power station. This was rejected due to its lower efficiency compared with a combined cycle gas turbine system when operated for sustained periods.

An alternative turbine configuration for the CCGT of 2+1 (two gas turbines + one steam turbine) was considered as potentially meeting the design criteria for the power station. However, the 1+1 configuration was chosen due to its relative higher efficiency, lower emissions, latest proven technology and lower cost of generation.

Gas Pipeline

The selection of the preferred pipeline route from a connection point near the Iona or Otway gas plants to the power station site has taken into account environmental, topographical and physical constraints. Considered constraints included constructability issues associated with lava flows from the numerous extinct volcanoes of central western Victoria and the high conservation significance of the small pockets of remnant vegetation in southwest Victoria due to their ecological function as wildlife refugia.

The initial premise pursued in the pipeline route selection was to follow the easements of the existing Iona to Adelaide (SEAGas) Pipeline and Iona to Portland (Western) Pipeline as much as possible, as abutting existing easements reduces the overall impact on properties and land use by consolidating pipelines in the one infrastructure corridor. With the exception of the area adjacent to Iona gas plant and the area between Curdies River and Merri River, a feasible route that minimised impacts on remnant native vegetation was identified adjacent to the SEAGas and Western pipelines, running initially on the southern side and then on the northern side.

Landslip potential and commitments made by Santos in relation to future pipeline routes on a property near Iona gas plant constrained route options in this area and a new route in stable terrain away from existing infrastructure was identified.

West of Curdies River, the existing SEAGas and Western pipelines pass close to a number of residences, outbuildings and farm and gas pipeline infrastructure. The considerable number of ‘pinch points’ in this area favoured the selection of a new route to avoid multiple crossings of the existing pipelines. A new route to the north of the existing pipelines was identified. The new route runs through larger landholdings, generally north of the intensive dairy farming areas around Allansford. Remnant vegetation and land use impacts are minimised by this route.

Designing out impacts is the primary mitigation, and overall, it is considered that the proposed pipeline route avoids or reduces impacts on occupation (residences), existing infrastructure (farm and gas), remnant vegetation and land use.

Brief description of key alternatives to be further investigated:

The power station site and gas pipeline route selection process has been rigorous and has considered all prudent and feasible options and alternatives. Similarly, power station configuration has considered all available and proven technology options.

The route for a water supply pipeline from the Port Fairy WRP to the power station site has not yet been determined. At this stage any water pipeline constructed under this water supply option is anticipated to generally follow the Hamilton - Port Fairy Road, however, a detailed route alignment study will be required to further define the route.

5. Proposed exclusions

Statement of reasons for the proposed exclusion of any ancillary activities or further project stages from the scope of the project for assessment:

There are no proposed exclusions.

No further project stages are envisaged and none are included in this assessment.

6. Project implementation

Implementing organisation:

Santos Ltd and possibly Wannon Water (for the water supply pipeline).

Implementation timeframe:

The proposed timeframe for implementation of the power station is given in Table 2 below. There is not yet an implementation timetable for the water supply pipeline.

Table 2 Implementation Timeframe

Timing	Activity
2008	Conceptual design for power station and gas pipeline - complete
2008 – Q1 2010	Undertake environmental impact assessment and seek environmental and regulatory approvals for project
2008	FEED for power station and gas pipeline
Q3 2008	Commence voluntary easement acquisition for gas pipeline
2010 – 2012	Power station construction
2011	Gas pipeline construction
Q4 2011	Nominal commissioning date for gas pipeline
Q1 2012	Nominal commissioning date for first stage of power station
2012 – 2017	Nominal expansion of power station to 1,000 MW
2017 – 2022	Nominal expansion of power station to 1,500 MW

Proposed staging:

As detailed in implementation timeframe above.

7. Description of proposed site or area of investigation

Has a preferred site for the project been selected?

☐ No ☒ Yes.

General description of preferred site:

The indicative location of the proposed project is shown in Figure 1, with aerial photography of the power station site given in Figure 2. Photographs of the proposed power station site are given in Plate 1.

There are no World Heritage properties, Australian heritage sites, Ramsar wetlands or critical habitats within the proposed project area.

The region is covered by the West Victoria Regional Forest Agreement (RFA).

Power Station site

Topography/landform
The proposed power station site consists of gently undulating terrain. The site is located in the elevated area of the parcel and material excavated from that site is at this stage intended to be used to construct a bench for the switchyard which is located in the lower lying part of the site.

Site geology and soil types
Preliminary investigations have revealed that the site geology is highly variable, comprising mostly Holocene and Holocene to Pliocene formations. The mostly Holocene formation consists of fluvial alluvium, gravel, sand and silt materials. The Holocene to Pliocene formation consists of extrusive tholeiltic to alkaline basalt, minor scoria and ash. A soft layer of soil of one to two metres thick is present.

Drainage/waterways
Shaw River is located approximately 1 km to the northwest and west of the site. The majority of the site is well drained and drains to Shaw River via a minor tributary. Low-lying areas occur adjacent to Riordans Road near the site of the proposed switchyard.

Native/exotic vegetation cover
The site is cleared land, and has been used for grazing. The site is bordered on two sides by a Timbercorp blue gum plantation that is approximately seven years old.

A cypress windbreak is located on the property.

Physical features
No notable physical features are present at the site.

Built structures
A windmill and tank are located on the property. A hay shed and outbuilding are located adjacent to the western boundary of the site. There are several residences in the general vicinity of the site, with the closest approximately 1.4 km to the southwest.

Road frontages
The proposed power station site is bounded on the south by Riordans Road, which is a single-lane, gravelled rural road and on the east by Old Dunmore Road. The property owned by Santos extends east to McGraths Road.

Gas Pipeline route, including compressor station site

Topography/landform
The project area lies within two Victorian Bioregions – the Victorian Volcanic Plain and the Warrnambool Plain. The Victorian Volcanic Plain Bioregion is characterised by open areas of grassland, small patches of open woodland, stony rises denoting old lava flows, the low peaks of long-extinct volcanoes and numerous scattered large shallow lakes (DPI, 2008a).

The Warrnambool Plain Bioregion extends from Portland to Moonlight Head along the Port Campbell coastline and is generally flat to undulating, with elevations reaching 150 m in a few locations (DPI, 2008b). The main geomorphological features in the area include steeply sloped valleys, broad flat plains, limestone cliffs, coastal embayments and coastal sand dunes.

Geology and soil types
The soils of the Victorian Volcanic Plain are variable and range from red friable earths to scoriaceous material, and support Plains Grassy Woodland and Plains Grassland ecosystems (DPI, 2008a).

Soils of the Warrnambool Plain are nutrient deficient over low calcareous dune formations and the cliffed coastline. Much of the limestone has been overlain by more recent sediments. Between the limestone dunes are areas of swampland, which are characterised by highly fertile peats that are subject to seasonal inundation (DPI, 2008b).

Drainage/waterways
The two major watercourses along the pipeline route are the Hopkins River and the Curdies River.

The Hopkins River flows from headwaters in the Grampians and drains to the Hopkins River estuary at Warrnambool. Environmental assessments have shown the Hopkins River to be one of the most degraded in the state with high levels of salinity, nutrients and turbidity, largely as a result of surrounding land use (Metzeling, 2001).

The Curdies River is part of the Otway Coast Basin and flows south, draining to the ocean at Peterborough. The proposed pipeline route also crosses the Moyne River and Merri River as well as a number of smaller creeks and ephemeral, unnamed streams and drainage channels. Drainage in the region displays a rectilinear pattern with most rivers and streams deeply incised.

Native/exotic vegetation cover
The majority of the pipeline route traverses highly disturbed landscapes of predominantly cleared farmland. Remnant vegetation is confined to road reserves, watercourses and isolated pockets usually associated with drainage lines. Intact vegetation communities are largely isolated, with scattered trees being the predominant remnants. These remnants are generally highly modified by broad-scale landscape changes as a result of landscape clearing and degrading processes such as livestock grazing, weed invasion and altered fire regimes.

Physical features
Depressions (swales) between old lava flows along the pipeline route are subject to inundation in periods of wet weather.

There are no other notable physical features along the pipeline route other than those described under landform and geology.

Built structures
The pipeline route traverses predominantly private, freehold agricultural land and there are a number of houses and other farming-related built structures in the vicinity of the pipeline route. It is located in proximity to other gas infrastructure including pipelines, scraper and metering stations and midline valves. Powerlines, railways, roads and other pipelines (e.g., water supply) cross the proposed route.

Road frontages
There is a network of major and minor roads along the route of the proposed pipeline, including, Hopkins Highway, Princes Highway, Penshurst–Warrnambool Road, Koroit–Woolsthorpe Road, Warrnambool–Caramut Road, Cobden–Warrnambool Road and Cobden–Port Campbell Road. Additionally, a local road network of smaller rural roads services the communities in the vicinity of the pipeline.

<u>Water Pipeline</u>
The route for a water supply pipeline from the Port Fairy WRP to the power station site has not yet been determined. At this stage the water pipeline is anticipated to generally follow the Hamilton – Port Fairy Road, however, a detailed route alignment study will be required to further

define the route. As such, a general environmental description has not been provided at this stage.

Site area:

The power station site is approximately 35 ha and is located within a much larger landholding owned by Santos. The larger landholding may accommodate landscaping and possibly tree plantations.

The compressor station is likely to be contained in a compound of approximately 130 m x 185 m (2.4 ha) on a larger parcel of land to be purchased by Santos. The footprint for the midline valve site is likely to be approximately 45 m x 20 m and the inlet meter site will be contained in a compound measuring approximately 60 m x 65 m.

Route length:

The length for the conceptual gas pipeline alignment is approximately 100 km. The pipeline will be located in an easement that will generally be about 25 m wide.

The proposed water supply pipeline from Port Fairy WRP to the power station site is anticipated to be approximately 30 km, although the detailed route alignment has not yet been determined.

Current land use and development:

Power Station site

The proposed power station site has recently been used for cattle and sheep grazing. Land to the west, south and north of the power station site is currently used for commercial forestry purposes.

Gas Pipeline, including compressor station

Land traversed by the proposed gas pipeline is used for sheep and cattle grazing and dairying. Cultivation and fodder crops associated with dairying enterprises are other land uses. Gas industry assets are adjacent to or intersect the proposed pipeline route.

Water Pipeline

The water supply option and the route of any pipeline has not yet been determined, however, the most likely route for a water supply pipeline is between Port Fairy and Orford, along Hamilton – Port Fairy Road. The land in this area is dominated by sheep and cattle grazing, towards Orford are areas used for commercial forestry.

Description of local setting:

Power Station site

Several residences are located within 2.5 km of the proposed power station site, including one residence 2 km to the east (off McGraths Road), one 1.9 km to the south and one 1.4 km to the southwest (along the Hamilton-Port Fairy Road). Blue gum plantations have been established on the south side of Riordans Road and to the west and north of the proposed site. Roadside vegetation exists along Old Dunmore Road.

Gas Pipeline, including compressor station

The gas pipeline route traverses predominantly private freehold agricultural land. Approximately 120 land owners within the project area will be directly affected by the project.

The main towns in the vicinity of the pipeline route are Port Campbell, Allansford, Warrnambool, Koroit and Orford. These towns and urban centres provide services to their respective communities and surrounding farms.

Water Pipeline

The proposed water supply pipeline route is not known at present, although the majority of land adjacent to the Hamilton – Port Fairy Road is private freehold agricultural land. The number of private properties to be impacted is not yet known.

Planning context:

Power Station site
The proposed power station site is subject to the Farming Zone in the Moyne Planning Scheme. There are no overlays affecting the land. Industry is a prohibited use under the Farming Zone, and therefore a Planning Scheme Amendment is being sought for the proposed use.

Gas pipeline, including compressor station
The proposed gas pipeline route is predominantly covered by the Farming Zone in both the Moyne and Corangamite planning schemes, but also the Road Zone. The connection point to the South West Pipeline is covered by the Special Use Zone 4 Warre Road, Port Campbell - Woodside Gas Processing Plant of the Corangamite Planning Scheme.

The gas pipeline alignment traverses land south of the small rural community of Cudgee which is zoned Low Density Residential Zone under the Moyne Planning Scheme. The Vegetation Protection and Environmental Significance overlays of the Corangamite Planning Scheme cover parts of the pipeline route. The Vegetation Protection Overlay applies mostly to roadside vegetation whereas the Environmental Significance Overlay 1 has been applied to watercourses, water bodies and wetlands. It also applies to Curdies River.

A planning permit will not be required for the gas pipeline, and no prohibitions contained in the planning schemes will apply to the pipeline (section 85 of the *Pipelines Act 2005*). However, a pipeline licence will be required for the pipeline under that Act.

The Wildfire Management Overlay of the Moyne Planning Scheme affects the proposed route in three places.

Details of any management plans pertinent to the proposed development will be sought through consultation with both Corangamite and Moyne Shire Councils.

Water Pipeline
A preliminary route for a water supply pipeline from the Port Fairy WRP to the power station site has been identified as discussed above. The detailed pipeline route has not yet been determined and consultation with Wannon Water is currently being undertaken to define the commercial arrangements surrounding the water supply pipeline construction and environmental assessment processes. For these reasons the planning context for the water pipeline is unknown at this stage.

Local government area(s):

The proposed power station site is situated in Moyne Shire.

The proposed pipeline is located in the Corangamite and Moyne shires.

The most likely location for a water supply pipeline is entirely within Moyne Shire.

8. Existing environment

Overview of key environmental assets/sensitivities in project area and vicinity

The main environmental assets and sensitivities in the project area in relation to the power station and gas pipeline are included below. As the proposed route for a water pipeline has not been defined it has been excluded from this section.

- Noise – the proposed power station and gas pipeline will be located in a rural environment with low background noise levels. Several residential properties are located in the vicinity of the proposed power station site, the closest of which is 1.4 km southwest of the proposed power station site.

- Air quality – the proposed power station and gas pipeline will be located in a rural environment with low air emissions in terms of particulate matter and oxides of nitrogen and sulfur. Concentrations of greenhouse gases are also likely to be low in the proposal area.

- Watercourses – the majority of watercourses in the vicinity of the proposed development have been highly altered due to clearance of native vegetation and due to runoff from farming activities. Consequently, their banks are susceptible to erosion and the ecological values are likely to be vulnerable.

- Remnant vegetation along gas pipeline route – the majority of the pipeline route traverses modified landscapes, predominantly cleared farmland. Remnant vegetation is confined to road reserves, watercourses and isolated pockets usually associated with drainage lines (see above). These pockets of remnant vegetation are of high conservation significance due to their ecological function as wildlife refugia.

- Flora and fauna – 27 listed species of state significance have been identified within 1 km of the proposed gas pipeline using flora and fauna data layers supplied by DSE. In addition, using the Department of the Environment, Water, Heritage and the Arts (DEWHA) Protected Matters Search Tool, a further 17 threatened species of National Environmental Significance and 10 migratory species have been identified to potentially occur within 1 km of the project. Information on Ecological Vegetation Classes (EVC) and biosites supplied by DSE indicates that the gas pipeline intersects seven EVCs identified as vulnerable or endangered and four biosites.

- Landscape and Visual – the existing landscape value and visual amenity of the area in the vicinity of the power station site is rural. The introduction of the power station into this area will cause a change in the landscape.

- Roads and traffic – many of the roads in the vicinity of the proposed project are sealed or gravelled rural roads, with low traffic volumes.

- Geology – slope stability is an issue in the deeply incised gullies of the Port Campbell area. Rock associated with the extensive lava flows that extend from the numerous extinct volcanoes of central western Victoria to the coast near Port Fairy constrains suitable pipeline routes.

- Proliferation of gas pipelines – there are already several pipelines and gas facilities located in the area. As a result, many landholders already have pipeline easements located on their properties. The success of rehabilitation of previous pipeline construction works varies, raising land use issues.

9. Land availability and control

Is the proposal on, or partly on, Crown land?

☐ No ☒ Yes If yes, please provide details.

The proposed gas pipeline route crosses Crown land at its intersection with watercourses and road reserves.

It is anticipated that the water supply pipeline from Port Fairy WRP to the power station site will traverse some Crown land in the form of road reserves and watercourse crossings. However, the detailed route alignment of the water pipeline is not yet determined.

Current land tenure:

The gas pipeline route predominantly traverses private freehold. Some Crown land will be crossed by the gas pipeline, as outlined above. The power station site is owned by Santos which is negotiating the purchase or long term lease of the compressor station site. The tenure of the water supply pipeline is not currently known.

Intended land tenure:

At this stage Santos intends to retain freehold ownership of the proposed power station site, but may lease part of its landholding to a commercial forestry business to establish plantations.

Santos will purchase or obtain a long-term lease over land required for the compressor station.

Land required for the metering stations and midline valve will be included in the easement to be acquired for the proposed gas pipeline. Easements will be either voluntarily negotiated or acquired under the *Pipelines Act 2005 (Vic)* and the *Land Acquisition and Compensation Act 1986 (Vic).*

Easements for the proposed water supply pipeline will need to be negotiated or compulsorily acquired by Wannon Water.

Other interests in affected land:

There are several pipelines with associated easements along the route of the proposed pipeline. Santos proposes that the easement of the new gas pipeline will abut the existing easements wherever possible (such as where the same route is being followed). However, a number of crossings of the existing easements will be required, and agreements with the easement beneficiaries will be sought. The assets and their associated easements that will be crossed are as follows:

- Geographe-Thylacine Pipeline, owned by Woodside Energy Ltd.
- Casino Pipeline, owned by Santos.
- Wallaby Creek 2 Flow Line, owned by TRUenergy Gas Storage Pty Ltd.
- Allansford to Portland Pipeline, owned by APA (GasNet) (Operations) Pty Ltd.
- SEAGas Pipeline, owned and operated by South East Australia Gas Pty Ltd.
- Western Pipeline, owned and operated by APA (GasNet) Australia (Operations) Pty Ltd.
- The South West Pipeline, owned by APA (GasNet) Australia (Operations) Pty Ltd, will be tapped into near the Otway gas plant.
- South Otway Pipeline, owned by Wannon Region Water Corporation.

Interests in the land affected by the proposed water supply pipeline are currently unknown.

To Santos' knowledge, there are no Native Title claims in the immediate vicinity of the proposed development. However, the Gunditjmara people have Native Title west of the proposed power station site from Shaw River. It is understood that the Kirrae Whurrong people have a cultural heritage interest in the project area.

10. Required approvals

State and Commonwealth approvals required for project components:

Known approvals required for the project are:

- Environment Effects Statement (EES) – a referral under the *Environment Effects Act 1978 (Vic)* (this document) is being submitted to seek a decision on the appropriate level of assessment for the proposed development. The referral has been prepared because the proposal triggers one of the referral criterion, being 'potential greenhouse gas emissions exceeding 200,000 tonnes of carbon dioxide equivalent per annum, directly attributable to the operation of the facility'. Santos submits that an EES is the appropriate level of assessment for this project.

- Planning scheme amendment – an application will be made to amend the Moyne planning scheme to reflect the use and development of the power station site for electricity generation. The intention of this amendment is to avoid or minimise the potential for subsequent planning permits (e.g., for native vegetation removal) or, if that is not possible, to exhibit the amendment concurrently with the planning permit applications.

- Planning permit – a planning permit may be required for some aspects of the project (e.g., the water supply pipeline, if required), depending upon the nature of the planning scheme amendment. If that is the case, it is anticipated the planning permit application would be assessed concurrently with the required planning scheme amendment and by the same planning authority.

- EPBC referral – a referral under the Commonwealth *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act) will be submitted to determine whether the project will have a significant impact on a matter of national environmental significance, and require formal assessment and approval under the EPBC Act. If assessment is required under the EPBC Act, it is anticipated the Commonwealth DEWHA would endorse the Victorian EES process. If an EES is not required for the project, the Commonwealth Minister would probably require the project to be assessed by another means provided for by the EPBC Act.

- Works approval and licence – the proposed power station is classified as a Scheduled Premises under the Environment Protection (Scheduled Premises and Exemptions) Regulations 2007 (Vic). A Works Approval and Licence will be required under the *Environment Protection Act 1970 (Vic)*.

- Pipeline licence – a pipeline licence will be required for construction and operation of the gas pipeline under the *Pipelines Act 2005 (Vic)* and Pipelines Regulations 2007 (Vic) in the form of a pipeline construction licence and consent to operate a gas pipeline. The Pipelines Act also permits the pipeline licensee, with the approval of the Minister for Energy Resources, to compulsorily acquire easements for the pipeline in accordance with the *Land Acquisition and Compensation Act 1986 (Vic).*

- Pipeline construction works on or beneath a waterway will require a permit from the relevant catchment management authorities, in accordance with the *Water Act 1989 (Vic).* Additionally, construction across or beneath roads requires approval from the Corangamite Shire, Moyne Shire and VicRoads (depending on who is the road manager) under either the *Local Government Act 1989 (Vic)* or the *Road Management Act 2004 (Vic).*

- Recycled water pipeline approval – approvals associated with construction and operation of the proposed water supply pipeline will be procured under the *Water Act 1989* and, if required, the *Planning and Environment Act 1987 (Vic)*.

- Major hazard facility licence – operation of the power station as a major hazard facility will require a licence or certificate of compliance under the *Occupational Health and Safety Act 2004 (Vic).*

- A licence to generate electricity is required (unless exempt) under the *Electricity Industry Act*

2000 (Vic) before electricity can be sold into the National Electricity Market.

- An agreement will be required to connect to the Victorian high voltage electricity grid. This will be issued by VENCorp following consultation with SP AusNet, the asset owner.

- An agreement to connect to the Victorian gas transmission system will be required under the *Gas Industry Act 2001 (Vic)* with VENCorp.

- Net Gain agreement with DSE – may be required in accordance with the requirements of Victoria's Native Vegetation Management - A Framework for Action. It is also possible that permission will be required to remove flora from public land under the *Flora and Fauna Guarantee Act 1988 (Vic)*.

- Cultural heritage management plan (CHMP) – approval of a cultural heritage management plan by the Registered Aboriginal Party or Aboriginal Affairs Victoria is required under the *Aboriginal Heritage Act 2006 (Vic)* for projects requiring an EES, or if there is significant ground disturbance of areas of cultural heritage sensitivity.

Have any applications for approval been lodged?

☒ No ☐ Yes If yes, please provide details.

Approval agency consultation (agencies with whom the proposal has been discussed):

Briefings and consultation concerning the proposed development have been undertaken with:

- Department of Primary Industries (Minerals and Petroleum Division) (DPI)
- Department of Planning and Community Development (DPCD)
- Department of Innovation, Industry and Regional Development (DIIRD)
- Department of Sustainability and Environment (DSE)

Other agencies consulted:

Other agencies to be consulted include:

- Department of the Environment, Water, Heritage and the Arts (DEWHA)

Local government and water authorities to be consulted include:

- Moyne Shire Council
- Corangamite Shire Council
- Wannon Water
- Glenelg Hopkins Catchment Management Authority
- Corangamite Catchment Management Authority

Regulatory agencies and network operators consulted include:

- National Electricity Market Management Company
- Victorian Energy Networks Corporation
- SP AusNet (Victorian electricity transmission system asset owner and operator)

PART 2 POTENTIAL ENVIRONMENTAL EFFECTS

Potential environmental effects in regards to the power station and the gas pipeline are included below. Environmental effects of the water supply pipeline have not been included as the route has not been identified and therefore impacts can not be assessed.

11. Potentially significant environmental effects

Overview of potentially significant environmental effects:

Noise
The major sources of noise emissions are expected to be pipeline construction noise, power station construction noise, power station operation noise and compressor station noise. Construction noise impacts will be temporary and for construction of the pipeline(s), the impacts will be mobile, moving with the pipeline spread.

The power station and compressor station will be designed such that EPA noise criteria will be achieved at residential receptors during operation, and a preliminary noise assessment has indicated that this is achievable. Low background noise levels are a feature of the rural landscape and a detailed assessment of the existing noise levels, predicted impacts, and noise mitigation measures will be developed.

Air quality
Construction of the power station and pipeline(s) has the potential to cause dust impacts on the surrounding environment. Best practice dust suppression methods will be employed throughout construction and will be detailed in the construction and operation environmental management plans (EMP).

Emissions to the atmosphere during operation of the power station in the form of $PM_{2.5}$, PM_{10}, NO_X and SO_X will be within EPA limits and are unlikely to adversely affect air quality or human health. A detailed study of air quality impacts and mitigation measures will be carried out.

Land use
Potential land use issues associated with the construction and operation of the power station and pipeline(s) include:
- Temporary loss of pasture or crops along the pipeline easement.
- Temporary constraints on stock movement and access to property.
- Reduced productivity due to inadequate or unsuccessful rehabilitation.
- Constraints on future activities on the gas and water supply pipeline easements.

These are unlikely to be significant as they are temporary in nature and provided environmental management is effective, impacts will be minimised. Access and rehabilitation requirements will be negotiated with landowners.

Strategic
There are several pipelines in the vicinity of the proposed gas pipeline route (in particular, at the south-eastern end). Construction methods for construction of the pipeline in the vicinity of operating gas pipelines and infrastructure will be discussed and agreed with the asset owners and/or operators.

Greenhouse gas (GHG)
The project will generate greenhouse gases that contribute to the phenomenon of global warming. A detailed assessment of the amount of GHGs likely to be produced by all major components of the proposed development and their effects will be carried out.

Flora and fauna
Potential impacts on flora and fauna may be direct or indirect. Direct impacts result from vegetation clearance within the project area, which has the potential to temporarily displace small sedentary fauna species, such as frogs and lizards or restrict feeding activities and movement during the construction phase of the project. However this is anticipated to be minimal due to the mitigation already undertaken via site and pipeline route selection.

Indirect impacts are caused by project-related activities such as changes in hydrological regimes or sediment runoff and the invasion of pest or weed species. Mitigation measures to minimise sediment runoff and work practices to control the spread of invasive weed species are likely to result in a less-than-significant impact on flora and fauna.

Due to restrictions on access to the gas pipeline route, uncertainties in regards to the occurrence of flora and fauna exist and field investigations and detailed studies will be required to be carried out to assess likely impacts and mitigation measures for flora and fauna.

Surface water and drainage

The proposed gas pipeline will intersect a number of watercourses and drainage lines, including Hopkins River, Curdies River, Merri River and Moyne River. It is proposed that HDD will be used for all major watercourse and creek crossings. All other watercourses will be crossed using open cut construction methods. Potential impacts on surface water environments include changed flow regimes as a result of watercourse crossings or degradation of water quality due to construction runoff, sedimentation or accidental spills.

Once pipeline construction is complete and the trench has been backfilled and compacted, there is the potential for subsidence to occur, which can divert surface water and lead to erosion. The risk of this occurring depends on soil type, soil moisture and the level of backfill compaction. Proposed mitigation measures to be implemented to prevent this occurrence include appropriate reinstatement methods, consisting of adequate compaction and topsoil preservation.

Similar considerations will apply to the construction of a water supply pipeline. This will be further addressed once the detailed route alignment has been determined as potential impacts are largely unknown at this stage.

Landscape and visual

The power station will be visible in the landscape for the life of the project. Blue gum plantations, roadside vegetation and elevated ground surrounding the site will reduce visual impacts by screening the site.

The main visual impacts related to the gas pipeline will be a direct result of construction and will therefore be short-term, as the pipeline will be buried beneath the surface and the easement rehabilitated in accordance with the requirements and legal obligations contained in the *Pipelines Act 2005 (Vic)*. Evidence of the pipeline that will remain above ground will be the compressor station, midline valve, connection point to the South West pipeline, signage and test points. Similar minimal effects are anticipated from construction and operation of the water supply pipeline where aboveground facilities are likely to include scour valves, air release valves and stop valves.

Roads and traffic

Construction of the power station and gas and water pipelines will bring additional light and heavy vehicle traffic to the project area which may impact on road safety, local amenity, road maintenance and road use. A traffic study will be undertaken.

Aboriginal cultural heritage

The project has the potential to impact on Aboriginal cultural heritage. The presence of cultural heritage artefacts in the project area is as yet unknown. Consultation with the local Indigenous group and the preparation and agreement of a CHMP, if required, will minimise the likelihood of any significant impacts on Aboriginal cultural heritage.

Regional community

Impacts on the regional community due to the presence of the construction and operation workforce in the area are likely to be positive from an economic perspective. The construction workforce will be accommodated in a construction camp or camps to be established at the power station site, or another suitable site in the vicinity of the pipeline route.

Hazard and risk

The project has the potential to increase the severity of an accident due to the cumulative effect of several pipelines located close together. A preliminary hazard and risk assessment will be

undertaken.

12. Native vegetation, flora and fauna

Native vegetation

Is any native vegetation likely to be cleared or otherwise affected by the project?

☐ NYD ☐ No ☒ Yes

The power station site has been cleared for grazing. It is believed that the site is now devoid of native vegetation, and therefore no native vegetation will be affected at this location.

The gas pipeline route has been selected to avoid remnant stands of native vegetation, and no significant stands or patches will require clearance to facilitate pipeline construction. However, the pipeline route crosses roads and watercourses that have native vegetation, some protected by the Vegetation Protection Overlay of the Corangamite Planning Scheme. The extent of potential impact is unknown at present, due to restrictions accessing the gas pipeline route. However, HDD or other construction methods will be investigated at road reserve and watercourse crossings to minimise or avoid impacts on native vegetation.

The extent of native vegetation removal required for the proposed water supply pipeline, is not known. The design of the pipeline alignment will aim to avoid remnant native vegetation where possible.

What investigation of native vegetation in the project area has been done?

A preliminary desktop assessment has been undertaken to ascertain which ecological vegetation classes (EVCs) occur within 1 km of the proposed gas pipeline, using the EVC_BCS100 GIS data layer supplied by the DSE. High resolution aerial photography has been used in selecting and refining the proposed pipeline route and site inspections were used to resolve uncertainty arising from the aerial photography interpretation.

What is the maximum area of native vegetation that may need to be cleared?

☒ NYD Estimated area ……(hectares)

The area of native vegetation expected to be cleared to facilitate the development has not yet been determined, as the choice of construction method and the proposed water pipeline route alignment will affect the extent of clearance required.

A FEED study being undertaken concurrently with the environment assessment will inform the construction methods and enable an assessment of the area of native vegetation required to be cleared.

How much of this clearing would be authorised under a Forest Management Plan or Fire Protection Plan?

☒ N/A …… approx. percent

Which Ecological Vegetation Classes may be affected?

☐ NYD ☒ Preliminary assessment completed.

The following EVCs occur within 1 km of the proposed gas pipeline route:

- Plains Swampy Woodland.
- Swamp Scrub.
- Damp Heath Scrub.
- Lowland Forest.
- Damp Sands Herb-rich Woodland/Damp Heathland / Damp Heathy Woodland Mosaic.
- Damp Sands Herb-rich Woodland.
- Herb-rich Foothill Forest.

These EVCs are classified as endangered or vulnerable. Field investigations will be undertaken to confirm the presence or absence of these EVCs and their quality.

It is currently unknown whether any EVCs will be potentially impacted by any water supply pipeline. Further investigations will be undertaken when a water supply option is determined and pipeline route is finalised.

Have potential vegetation offsets been identified as yet?

☒ NYD ☐ Yes

Other information/comments?

A specialist study of the impacts of the project on native vegetation will be carried out, and suggested mitigation measures will be developed.

Flora and fauna

What investigations of flora and fauna in the project area have been done?

Desktop investigations of recorded flora and fauna in the area of the proposed power station and gas pipeline have been conducted using GIS data supplied by DSE, in the form of a search of biosites, flora and fauna records and EVCs that occur within 1 km of the gas pipeline route and on the power station site. A protected matters search was undertaken for species of national environmental significance using the online EPBC search tool. Detailed field investigations, impact assessment and suggested mitigation strategies will be undertaken.

Have any threatened or migratory species or listed communities been recorded from the local area?

☐ NYD ☐ No ☒ Yes

Flora and Fauna Guarantee Act 1988 (FFG) listed species that have been recorded within 1 km of the gas pipeline are given in Table 3. No listed species have been recorded from the power station site.

Table 3 FFG listed species occurring within 1 km of gas pipeline route (excluding the proposed water supply pipeline)

Category	Species Name	Common Name	VROTS Status
Birds	*Accipiter novaehollandiae*	Grey goshawk	Vulnerable
	Anseranas semipalmata	Magpie goose	Not Threatened
	Ardea modesta	Eastern great egret	Not Threatened
	Botaurus poiciloptilus	Australasian bittern	Endangered
	Dasyornis broadbenti	Rufus bristlebird	Not Threatened
	Egretta garzetta	Little egret	Endangered
	Grus rubicunda	Brolga	Vulnerable
	Hydroprogne caspia	Caspian tern	Not Threatened
	Ixobrychus minutus	Little bittern	Endangered
	Lewinia pectoralis	Lewin's rail	Vulnerable
	Neophema chrysogaster	Orange-bellied parrot	Critical
	Ninox connivens	Barking owl	Endangered
	Ninox strenua	Powerful owl	Vulnerable
	Oxyura australis	Blue-billed duck	Endangered
	Pezoporus wallicus	Ground parrot	Endangered
	Stictonetta naevosa	Freckled duck	Endangered
	Thinornis rubricollis	Hooded plover	Vulnerable
	Porzana pusilla	Baillon's crake	Vulnerable
Amphibians	*Litoria raniformis*	Growling grass frog	Endangered
	Pseudophryne bibronii	Brown toadlet	Endangered
Mammals (including bats)	*Miniopterus schreibersii (group)*	Common bent-wing bat	Endangered
	Phascogale tapoatafa	Brush-tailed phascogale	Vulnerable
	Perameles gunnii	Eastern barred bandicoot	Critical
	Potorous tridactylus tridactylus	Long-nosed potoroo	Endangered
Fish	*Nannoperca obscura*	Yarra pygmy perch	Not Threatened
	Prototroctes maraena	Australian grayling	Vulnerable
Plants	*Prasophyllum diversiflorum*	Gorae Leek orchid	Endangered

Additional species of national environmental significance have been identified as potentially occurring within 1 km of the proposed development (excluding the proposed water supply pipeline) using the EPBC online protected matters search tool. These additional species are given in Table 4 below.

Table 4 EPBC listed species (additional to FFG listed species) potentially occurring within 1 km of the proposed development (excluding the proposed water supply pipeline)

Category	Species Name	Common Name	Status
Birds	*Lathamus discolor*	Swift parrot	Endangered
	Rostratula australis	Australian painted snipe	Vulnerable
Mammals (including bats)	*Dasyurus maculatus maculatus*	Spotted-tail quoll	Endangered
	Isoodon obesulus obesulus	Southern brown bandicoot	Endangered
	Pseudomys fumeus	Smoky mouse	Endangered
	Pteropus poliocephalus	Grey-headed flying fox	Vulnerable
Fish	*Galaxiella pusilla*	Dwarf galaxias	Vulnerable
Plants	*Carex tasmanica*	Curly sedge	Vulnerable
	Glycine latrobeana	Purple clover	Vulnerable
	Prasophyllum frenchii	Maroon leek-orchid	Endangered
	Prasophyllum spicatum	Dense leek-orchid	Vulnerable
	Pterostylis cucullata	Leafy greenhood	Vulnerable
	Pterostylis tenuissima	Swamp greenhood	Vulnerable
	Senecio psilocarpus	Swamp fireweed	Vulnerable
	Taraxacum cygnorum	Coast dandelion	Vulnerable
	Thelymitra epipactoides	Metallic sun-orchid	Endangered
	Thelymitra matthewsii	Spiral sun-orchid	Vulnerable

Four biosites (sites identified by the DSE as sites of biological significance) have been identified along the route of the proposed gas pipeline. These biosites occur along watercourses or road verges and have been classified for their degree of naturalness, high degree of biodiversity or because they contain FFG-listed species. Further investigation of these sites will be undertaken and impacts on them will be minimised through realignment of the pipeline route, where possible, and sensitive crossing techniques, such as the use of boring or HDD, where appropriate.

If known, what threatening processes affecting these species or communities may be exacerbated by the project?

Threatening processes that may be exacerbated by the project include:
- Temporary displacement of small sedentary fauna species.
- Temporary restriction to feeding activities or movement as a result of construction activities, particularly due to pipeline construction.
- Disturbance during construction activities.
- Weed invasion or propagation of pest species.
- Sedimentation of aquatic habitats.

Are any threatened or migratory species, other species of conservation significance or listed communities potentially affected by the project?

☐ NYD ☐ No ☒ Yes

Migratory species of national environmental significance (additional to any species listed above) that have been identified using the EPBC protected matters search tool as potentially occurring within 1 km of the project (excluding the water supply pipeline) are given in Table 5 below.

Table 5 Migratory species of National Environmental Significance potentially occurring within 1 km of gas pipeline route (additional to species in tables 3 and 4).

Species Name	Common Name
Apus pacificus	Fork-tailed swift
Ardea alba	Great egret
Ardea ibis	Cattle egret
Gallinago hardwickii	Latham's snipe
Haliaeetus leucogaster	White-bellied sea-eagle
Hirundapus caudacutus	White-throated needletail
Merops ornatus	Rainbow bee-eater
Myiagra cyanoleuca	Satin flycatcher
Rhipidura rufifrons	Rufous fantail
Rostratula benghalensis s. lat.	Painted snipe

It is considered unlikely that there will be any significant impacts on any threatened or migratory species or other species of conservation significance or listed communities due to the mitigation already undertaken through sensitive siting of the power station and gas pipeline route. This will be further understood once land has been accessed and survey undertaken.

Is mitigation of potential effects on indigenous flora and fauna proposed?

☐ NYD ☐ No ☒ Yes

Extensive planning studies were conducted in the early stages of the project to identify the gas pipeline route and develop approaches to construction that minimise environmental disturbance. Construction techniques, such as the use of boring under roads and major watercourses, are proposed in order to avoid remnant native vegetation and therefore reduce impacts on terrestrial and aquatic ecological values. Further measures will be investigated to minimise impacts on remnant native vegetation such as identifying gaps in roadside vegetation where open trenching is proposed, refinement of the pipeline alignment prior to construction to avoid vegetation, trimming of vegetation rather than removal and locating the gas pipeline within introduced pasture paddocks wherever possible.

Other information/comments?

Detailed studies, including field surveys and assessment of potential impacts and mitigation options, will be carried out.

13. Water environments

Will the project require significant volumes of fresh water (eg. > 1 Gl/yr)?

☐ NYD ☒ No ☐ Yes

The annual raw water demand for the power station will be dependant on the specific CCGT units offered by the original equipment manufacturer and the actual plant operating regime. However, several likely operating scenarios have been considered and it is anticipated that the total annual raw water demand will be less than 0.5 GL/yr. Water is likely to be supplied as treated effluent from the Port Fairy WRP thereby reducing the current level of discharges to the ocean outfall.

Potable water will be required for employees at the power station site. It is anticipated that the requirement for potable water would be approximately 33 ML/yr.

Will the project discharge waste water or runoff to water environments?

☐ NYD ☐ No ☒ Yes

Stormwater runoff from the power station and switchyard will be collected and passed through an oil separator (triple interceptor) prior to entering a sedimentation pond. The sedimentation pond is proposed to discharge to Shaw River via one of its tributaries to the southwest of the power station site.

Brine solution from water treatment at the power station is proposed to be trucked to Warrnambool wastewater treatment plant for treatment.

During construction, water will be required to hydrostatically test the gas pipeline for structural integrity. It is likely this water will be disposed of to surrounding pastures or farm dams providing testing ascertains it is of acceptable discharge quality.

Are any waterways, wetlands, estuaries or marine environments likely to be affected?

☐ NYD ☐ No ☒ Yes

Construction of the gas pipeline will require the crossing of several watercourses, including Curdies River, Hopkins River, Merri River and Moyne River. Additionally, a number of smaller creeks and unnamed, largely ephemeral streams and drainage channels will be crossed by the proposed pipeline. Effects on these waterways will occur during pipeline construction, as outlined below.

Impacts due to the proposed water supply pipeline are currently unknown.

Are any of these water environments likely to support threatened or migratory species?

☒ NYD ☐ No ☐ Yes

Australian grayling, an FFG listed species, has been recorded from Brucknell Creek near Mapunga. The pipeline does not intersect this creek specifically, but it does intersect a tributary of Brucknell Creek, approximately 1.5 km away from the recorded sighting.

Potential impacts on threatened or migratory species in the vicinity of the water supply pipeline are currently unknown as the detailed route alignment has not yet been determined.

Are any potentially affected wetlands listed under the Ramsar Convention or in 'A Directory of Important Wetlands in Australia'?

☐ NYD ☒ No ☐ Yes

Could the project affect streamflows?

☐ NYD ☐ No ☒ Yes

Construction of the pipeline across watercourses may affect stream flows depending on the construction method used. Where feasible, all major watercourses and creeks (flowing watercourses) are likely to be crossed using HDD, which is unlikely to affect stream flows. However, open cut methods will be undertaken for smaller watercourses, including ephemeral creeks. This method will require the dewatering of part or all of the watercourse bed via a dam

and pump or flume method. This will temporarily alter stream flow characteristics in the immediate vicinity of the crossings, but not long term stream flow volumes.

The input of stormwater runoff from the power station site to Shaw River (after treatment and settlement) has the potential to increase stream flows in the Shaw River following heavy rainfall events.

A specialist study will be carried to identify any further potential impacts on stream flows and suggested mitigation measures.

Could regional groundwater resources be affected by the project?

☐ NYD ☒ No ☐ Yes

It is not anticipated the proposed development will require the extraction and use of groundwater.

Could environmental values (beneficial uses) of water environments be affected?

☐ NYD ☒ No ☐ Yes

Could aquatic, estuarine or marine ecosystems be affected by the project?

☐ NYD ☐ No ☒ Yes

During pipeline construction, erosion of exposed soils on the cleared right-of-way could occur due to heavy rain, leading to temporary sedimentation of waterways and impacts on aquatic ecosystems.

The proposed use of treated wastewater from the Port Fairy WRP would reduce discharges to the existing ocean outfall with potential beneficial impacts on the coastal and marine environment.

Is there a potential for extensive or major effects on the health or biodiversity of aquatic, estuarine or marine ecosystems over the long-term?

☒ No ☐ Yes

Is mitigation of potential effects on water environments proposed?

☐ NYD ☐ No ☒ Yes

Detailed mitigation measures will be proposed, and are likely to include:

- Scheduling the timing of pipeline construction to commence in the driest time of year (late spring to early autumn) to minimise the potential for erosion on the easement. Erosion control techniques or sediment containment measures will be implemented in sensitive areas and those identified as being susceptible to erosion.
- To minimise impacts on watercourses (and remnant vegetation associated with watercourses) HDD methods are likely to be used for all major water crossings where feasible.
- A spill contingency response plan will be developed as part of the environmental management plan (EMP) for the construction and operation phases of the project.
- Stormwater derived from the power station will be treated before being discharged to the natural drainage channels to the southwest of the proposed site.
- Best-practice reinstatement of the pipeline trench is proposed to ensure that slumping, which may alter current drainage patterns of the area is unlikely to occur.

Other information/comments?

14. Landscape and soils

Landscape

Has a preliminary landscape assessment been prepared?

☐ NYD ☒ No ☐ Yes

Is the project to be located either within or near an area that is:

- **Subject to a Landscape Significance Overlay or Environmental Significance Overlay?**

☐ NYD ☐ No ☒ Yes

The proposed gas pipeline route crosses Environmental Significance Overlay 1 - Watercourse, water body and wetland protection of the Corangamite Planning Scheme. The overlay applies to the Curdies River. The location of Landscape Significance Overlays and Environmental Significance Overlays in relation to the project are given in Figure 4.

- **Identified as of regional or State significance in a reputable study of landscape values?**

☐ NYD ☒ No ☐ Yes

- **Within or adjoining land reserved under the *National Parks Act 1975* ?**

☐ NYD ☒ No ☐ Yes

- **Within or adjoining other public land used for conservation or recreational purposes ?**

☐ NYD ☒ No ☐ Yes

Is any clearing vegetation or alteration of landforms likely to affect landscape values?

☐ NYD ☒ No ☐ Yes If yes, please briefly describe.

Is there a potential for effects on landscape values of regional or State importance?

☐ NYD ☒ No ☐ Yes

Is mitigation of potential landscape effects proposed?

☐ NYD ☐ No ☒ Yes

Detailed landscape mitigation measures will be developed. They are likely to include the use of landscaping around the power station site to screen it from views as much as possible, as well as careful refinement of the pipeline route(s) to avoid clearing of windrows and remnant vegetation and the employment of construction methods that negate the need for clearing roadside and stream side vegetation.

Other information/comments?

Soils

Is there a potential for effects on land stability, acid sulphate soils or highly erodible soils?

☐ NYD ☐ No ☒ Yes

Construction of the power station and gas (and possibly water supply) pipeline has the potential to cause erosion, particularly due to heavy rainfall on exposed soils and during watercourse crossings. Land stability could potentially be affected at steep watercourse crossings, such as at Curdies River. However, impacts on land stability will be minimised by the use of geomatting and best practice such as the regular installation of trench breakers on slopes to slow water flow along the pipe trench and the prompt revegetation of exposed soils.

There is the potential for subsidence of pipeline trenches. However, this risk will be minimised by best practice reinstatement, including adequate compaction of the trench and topsoil preservation.

Acid sulfate soils are not known to occur in the project area and, therefore, no adverse impacts are expected due to acid sulfate soils.

Are there geotechnical hazards that may either affect the project or be affected by it?

☒ NYD ☐ No ☐ Yes

Information gleaned from past gas pipeline projects in the area indicates that slip prone areas in the Port Campbell area have been avoided by the proposed gas pipeline route.
Other information/comments? A detailed investigation of impacts on soils and land stability will be carried out and comprehensive mitigation measures developed.

15. Social environments

Is the project likely to generate significant volumes of road traffic, during construction or operation?

☐ NYD ☐ No ☒ Yes.

The project will generate an increase in light and heavy vehicle traffic during construction of both the power station and gas and water supply pipelines (and associated components), both through the delivery of plant, equipment and materials and through the movement of the construction workforce to and from the site. It is anticipated that the majority of the construction workforce will be housed in a construction camp, which is likely to be located at the power station site. However, there will also be movement of local contractors and workers who live in nearby towns.

Increased traffic due to operation and maintenance activities of the proposed project is not anticipated to be significant and will largely consist of the transport of brine wastewater to Warrnambool wastewater treatment plant (approximately twice daily at 1500 MW capacity) and the travel of employees and contractors to and from the power station.

A more detailed assessment of impacts of the project on traffic volumes will be carried out.

Is there a potential for significant effects on the amenity of residents, due to emissions of dust or odours or changes in visual, noise or traffic conditions?

☐ NYD ☐ No ☒ Yes

Potential effects on the amenity of residents include:

- Emissions of dust during construction. This will be minimised through the use of best practice dust control techniques.
- Temporary noise emissions during pipeline and power station construction.
- Ongoing noise emissions during operation of the power station and compressor station.
- Impact on visual amenity. The power station site is already well screened due to blue gum plantations. Further landscaping undertaken as part of the project will provide additional screening. However, the height of the power station stack and depending on the configuration, the HSRG, means that they will be visible in the landscape, as will the switchyard structures.
- Increase in traffic on local roads during construction.
- Gaseous emissions from the power station (and compressor station) will be within threshold limits set by the Victorian EPA.

Is there a potential for exposure of a human community to health or safety hazards, due to emissions to air or water or noise or chemical hazards or associated transport?

☐ NYD ☒ No ☐ Yes

There will be some emissions of particulate matter and oxides of sulfur and nitrogen due to the power station (and compressor station). However, these are not anticipated to have a significant adverse impact on air quality or human health. Detailed air quality studies will be undertaken. These studies will also inform mitigation measures to be incorporated into the power station and compressor station design.

It is not envisaged that water, noise, chemical hazards or transport associated with the project will expose local communities to health or safety concerns. A preliminary hazard and risk assessment will be undertaken to identify potential hazards and propose appropriate mitigation measures to reduce risks.

Is there a potential for displacement of residences or severance of residential access to community resources due to the proposed development?

☐ NYD ☒ No ☐ Yes

Are non-residential land use activities likely to be displaced as a result of the project?

☐ NYD ☐ No ☒ Yes

There will be temporary impacts on land use during construction of the proposed gas and water supply pipeline, due to the curtailment of farming activities along the easement. Upon reinstatement of the easement, farming activities along the pipeline will be able to be resumed but

some activities will be restricted over the pipeline e.g., boring or excavation.

Do any expected changes in non-residential land use activities have a potential to cause adverse effects on local residents/communities, social groups or industries?

☐ NYD ☒ No ☐ Yes

Is mitigation of potential social effects proposed?

☐ NYD ☐ No ☒ Yes

The power station and compressor station will be designed such that noise and air emissions are within EPA limits.

Mitigation measures proposed for construction include best practice reinstatement methods for the pipeline trench and easement, such that farming activities are not adversely affected, dust suppression techniques to control air quality impacts during construction and the limiting of working hours for construction.

Other information/comments?

Cultural heritage

Have relevant Indigenous organisations been consulted on the occurrence of Aboriginal cultural heritage within the project area?

☒ No
☐ Yes

The Gunditjmara, Kirrae Whurrong and Framlingham have cultural heritage interests in the region. They will be consulted on Aboriginal cultural heritage in the project area, as part of the consultation and environmental impact assessment process. A CHMP, prepared in accordance with the *Aboriginal Heritage Act 2006 (Vic)*, will be prepared and approved under that Act if required.

What investigations of cultural heritage in the project area have been done?

No investigations have been done to date.

Is any Aboriginal cultural heritage known from the project area?

☒ NYD ☐ No ☐ Yes

Are there any cultural heritage places listed on the Heritage Register or the Archaeological Inventory under the *Heritage Act 1995* within the project area?

☒ NYD ☐ No ☐ Yes

Is mitigation of potential cultural heritage effects proposed?

☒ NYD ☐ No ☐ Yes

The extensive planning studies conducted in the early stages of the project to select a gas pipeline route that avoided areas of remnant vegetation and undisturbed land will reduce the likelihood of impacts on cultural heritage.

No other mitigation of potential cultural heritage effects is proposed at this stage beyond the potential preparation of the CHMP. A detailed assessment of impacts to cultural heritage and suggested mitigation measures will be carried out.

Other information/comments?

16. Energy, wastes & greenhouse gas emissions

What are the main sources of energy that the project facility would consume/generate?

- ☒ Electricity network. The power station will require electricity supply for ancillary services and start-up.
- ☒ Natural gas network. Power station gas requirement is anticipated to be 237 TJ/d in order to produce 1,500 MW of electricity.
- ☒ Generated onsite. The project will initially produce 500 MW, scaling up to 1,500 MW (possibly over 10 years). The power station will be connected to the Victorian electricity transmission network.
- ☐ Other.

What are the main forms of waste that would be generated by the project facility?

- ☒ Wastewater. Concentrated brine will be produced from water treatment at the power station. Waste stormwater runoff from the power station site will be treated via an oil separator and sedimentation pond prior to being discharged into a tributary of Shaw River.
- ☐ Solid chemical wastes.
- ☐ Excavated material.
- ☐ Other. The power station (and compressor station) will emit gaseous waste to the atmosphere including NO_x, SO_x, PM_{10} and CO_2.

What level of greenhouse gas emissions is expected to result directly from operation of the project facility?

- ☐ Less than 50,000 tonnes of CO_2 equivalent per annum
- ☐ Between 50,000 and 100,000 tonnes of CO_2 equivalent per annum
- ☐ Between 100,000 and 200,000 tonnes of CO_2 equivalent per annum
- ☒ More than 200,000 tonnes of CO_2 equivalent per annum

Please add any relevant additional information, including any identified mitigation options.

The selection of combined-cycle technology will result in a significant reduction in greenhouse gas emissions in comparison with open cycle technology due to generation efficiency.

The proposed location of the power station in western Victoria will significantly reduce electricity transmission distances to consumers in western Victoria. Consequently, line losses will be reduced so that less generation is required for the same quantity of delivered electricity, reducing greenhouse emissions and resulting in higher generation efficiencies.

17. Other environmental issues

Are there any other environmental issues arising from the proposed project?

☒ No ☐ Yes

18. Environmental management

What measures are currently proposed to avoid, minimise or manage the main potential adverse environmental effects?

- ☒ Siting:
- ☒ Design:
- ☒ Environmental management:
- ☐ Other:

The siting and design of the proposed power station, gas pipeline route and compressor station are the primary mitigation measures to date. These are described in more detail above in Section 4. Further detailed studies will further inform the power station design and refinement of the gas and water supply pipeline alignment. These studies will also suggest more detailed mitigation which can be incorporated into detailed construction and operation environmental management plans.

19. Other activities

Are there any other activities in the vicinity of the proposed project that have a potential for cumulative effects?

☒ NYD ☐ No ☐ Yes

Santos is aware of existing gas plants, pipelines and associated infrastructure in the region and approval of a gas-fired power station at Mortlake. Santos is not aware of any other developments in the region that are likely to have potential cumulative effects.

20. Investigation program

Study program

Have any environmental studies not referred to above been conducted for the project?

☐ No ☒ Yes.

A preliminary noise impact assessment has been undertaken in order to ascertain whether noise impacts from the proposed power station could be mitigated to within acceptable limits. The results indicated that this will be possible.

Has a program for future environmental studies been developed?

☐ No ☒ Yes.

Further environmental studies will be undertaken. It is expected that detailed assessments of impacts on flora and fauna, water environments, soils and geology, greenhouse gases, air quality, noise, landscape and visual, roads and traffic, indigenous and non-indigenous cultural heritage, land use and infrastructure, regional community and a preliminary hazard and risk assessment will be part of these studies.

Consultation program

Has a consultation program conducted to date for the project?

☐ No ☒ Yes

Santos has conducted some initial consultation and will embark on a concerted consultation program following submission of this referral.

The consultation program will focus on the following key stakeholder groups:

- Landowners directly affected by the proposed development.
- Indigenous people and communities.
- Victorian and Commonwealth Government.
- Corangamite and Moyne Shire Councils.
- Local communities.
- Local interest groups e.g., landcare groups.
- Industry and representative bodies.
- Other infrastructure asset owners.

The following stakeholders have or will be consulted:

- Victorian Department of Primary Industries (Minerals and Petroleum Division).
- Victorian Department of Planning and Community Development.
- Victorian Department of Innovation, Industry and Regional Development.
- Victorian Department of Sustainability and Environment.
- Commonwealth Department of the Environment, Water, Heritage and the Arts.

- Environment Protection Authority Victoria.
- Victorian Government (Premier and relevant Ministers).
- Commonwealth Government (relevant Ministers).
- Moyne Shire Council.
- Corangamite Shire Council.
- Kirrae Whurrong Aboriginal Corporation.
- Framlington Aboriginal Trust.
- Gunditjmara Aboriginal Co-operative.
- Wannon Water.
- NEMMCO.
- VENCorp.
- SPAusNet.

Consultation with directly affected landowners commenced immediately prior to the submission of this referral.

Has a program for future consultation been developed?

☐ NYD ☐ No ☒ Yes

Santos has developed a consultation program for the project and is compiling the Consultation Plan required under the Pipelines Act. The program and plan outline Santos' commitment to comprehensive and inclusive consultation with all affected and interested stakeholders.

The consultation program will involve information sessions, call-in centres, static displays and one-on-one meetings with key stakeholders and organisations. Information bulletins and fact sheets will complement these activities and ensure stakeholders are kept informed of the progress of the project and, in particular, about the environmental approvals process.

Santos has established a hotline (freecall) and project email address to enable stakeholders to make enquiries and raise their concerns and issues. Information about the project will be available on Santos' website (www.shawriverpowerstation.com.au) and will be regularly updated.

Authorised person for proponent:

I, ……Ken Spicer……(full name),

…Santos Project Development Manager ……(position), confirm that the information contained in this form is, to my knowledge, true and not misleading.

Signature _____

Date

Person who prepared this referral:

I, ……Barton Napier……(full name),

…Coffey Natural Systems Environmental Approvals Project Director……(position), confirm that the information contained in this form is, to my knowledge, true and not misleading.

Signature _____

Date

Attachments

Figure 1 Locality Map

Figure 2 Proposed Power Station Site

Figure 3 Indicative Power Station Layout

Figure 4 Significance Overlays

Plate 1 Photographs of Power Station Site

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Regulations and Legislation

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Native Title Act 1993

Victorian Legislation and Regulations

Aboriginal Heritage Act 2006
Electricity Industry Act 2000
Environment Effects Act 1978
Environment Protection (Scheduled Premises and Exemptions) Regulations 2007
Environment Protection Act 1970
Flora and Fauna Guarantee Act 1988
Gas Industry Act 2001
Land Acquisition and Compensation Act 1986
Local Government Act 1989
Occupational Health and Safety Act 2004
Occupational Health and Safety Regulations 2007
Pipeline regulations 2007
Pipelines Act 2005
Planning and Environment Act 1987
Planning and Environment Regulations 2005
Road Management Act 2004
Water Act 1989