# Chapter 1

# Introduction

**This chapter provides an overview of the proposed Viva Energy Gas Terminal Project (the project) and sets out the purpose and structure of this Supplementary Statement for the project.**

On 28 December 2020, the Minister for Planning issued a decision determining that an Environment Effects Statement (EES) was required for the project under the Environment Effects Act 1978 ('Environment Effects Act') due to the potential for a range of significant environmental effects. An EES including 16 Technical Reports addressing the potential environmental effects of the project was prepared for public exhibition together with associated approvals applications. The EES was publicly exhibited from 28 February to 11 April 2022.

The Minister for Planning appointed an Inquiry and Advisory Committee (IAC) to advise on the project, the EES, draft Planning Scheme Amendment, the Development Licence applications and the Pipeline Licence application. The IAC conducted a public hearing from 20 June to 8 August 2022 and submitted its report to the Minister for Planning on 5 October 2022.

On 6 March 2023, the Minister for Planning directed that a Supplementary Statement was required for the project in accordance with sections 5 and 8C(2) of the Environment Effects Act, before the Minister could complete the assessment of the project's environmental effects for consideration by statutory decision makers.

## 1.1 Viva Energy Gas Terminal Project

Viva Energy Gas Australia Pty Ltd (Viva Energy) is planning to develop a gas terminal using a ship known as a Floating Storage Regasification Unit (FSRU), which would be continuously moored at Refinery Pier in Corio Bay, Geelong.

The project would introduce the infrastructure required to deliver a new source of natural gas supply to the south-eastern Australian gas market where there are projected baseload, seasonal and structural supply shortfalls expected in coming years.

The gas terminal would include the following components:

- An extension to the existing Refinery Pier.
- An FSRU continuously moored at Refinery Pier and supplied by visiting liquefied natural gas (LNG) carriers.
- A treatment facility located within the Viva Energy Geelong refinery site (refinery site).
- A 7km pipeline, comprising a 3km aboveground section on the pier and within the refinery site and a 4km underground section, from the FSRU to the South West Pipeline (SWP) connection point at Lara.

A decline in the production of gas from sources such as Bass Strait, the significant distance to Victoria from northern Australian gas reserves and resources, and the inability for existing pipeline infrastructure to deliver this northern gas to southern states is predicted to result in a gas shortage for the southern Australian domestic market. Victoria will increasingly require new sources or alternate ways to supply the gas that is needed to meet peak and/or seasonal demands. The project would provide a timely and flexible option for short and long-term energy supply by providing a secure and stable source of gas.

### 1.1.1 Background

In June 2020, Viva Energy announced its vision to transform its Geelong refinery into an Energy Hub. The Geelong Energy Hub would continue to deliver energy security for the country as well as support the company's ambition to play a role in the energy transition currently underway in the Australian economy, while helping to underpin the future viability of the critical refinery infrastructure.

Having been part of the Geelong community since 1954, the refinery supplies approximately half of Victoria's liquid fuel energy needs and 10 percent of Australia's requirements. The broader Energy Hub vision could see the site taking a leading role in supplying liquid fuels and gas as well as supporting the development of other alternative energy solutions. Importantly, diversification of the refinery site would protect local jobs, generate new jobs and skills, and support economic development for the region.

Gas plays a critical role in the Australian economy. It is an important component of our energy system and is widely used in residential, business and industrial applications and in power generation.

The production and use of gas is a significant contributor to Australia's greenhouse gas emissions, however, reducing emissions while balancing energy security through the transition to renewable energy presents an ongoing challenge.

In all energy transition scenarios, projections indicate that there will be continued gas use to 2050 and beyond.

In Victoria, additional sources of affordable gas will be essential to support the transition to a net zero emissions future and more flexible gas infrastructure will be required to increase the resilience of the energy system and to keep costs down.


Victorian gas production from legacy fields such as Bass Strait's Gippsland Basin is in decline and the state is becoming increasingly reliant on gas from northern states. However, constrained pipeline capacity from Queensland means southern Australian gas shortfalls will emerge in coming years unless there is a new source of gas supply.

The Australian Energy Market Operator (AEMO) is forecasting risks of gas shortfalls on extreme peak demand days from 2025 and the potential for small seasonal supply gaps from 2026, predominantly in southern Australia, ahead of annual supply gaps that will require new sources of supply from 2028.

The Australian Government (Future Gas Strategy, 2024), AEMO (Gas Statement of Opportunities, 2024) and the Australian Competition and Consumer Commission (ACCC) (Gas Inquiry 2017-2030, 2024 interim report) all recognise the potential for LNG import terminals to fill the forecast supply gaps.

"Without the development of new gas fields, pipelines and potentially LNG import terminals, or without a significant reduction in demand, the east coast will experience sustained gas shortfalls," the ACCC says.

Reducing the ability for the state to be adequately supplied with gas without also sufficiently reducing demand would have significant adverse impacts on the economy and on our lifestyle.

The Future Gas Strategy highlights that reducing supply would put upward pressure on prices across the economy which could lead to business closures and shortages of consumer goods and services.

Without the gas supply to support gas-fired power generation, the electricity grid would be unable to cope with peak electricity demands.

The proposed Viva Energy Gas Terminal offers:

- The shortest timeframe to develop a project with the potential to provide the required gas supply by the winter of 2028.
- A more cost-effective supply of gas compared to transporting gas long distances via new pipelines that would be required in the network.
- Proximity to Melbourne where the gas is needed most.
- Additional capacity for the VTS without the need to upgrade the SWP.
- The capacity to import gas from both Australian and international sources as a way of potentially improving competition within the market, particularly as international LNG prices are expected to ease in coming years as supply from the United States and Qatar increases.
- Siting in an established industrial area within the Port of Geelong.
- Operating synergies with the refinery – seawater needed for the operation of the gas terminal can be re-used and recycled through the refinery.
- No disturbance to Ramsar wetlands.
- The ability for the LNG storage and regasification ship to depart from its mooring when it is no longer needed leaving minimal remaining infrastructure.

The proposed Gas Terminal would form part of Viva Energy's diversification of the Geelong refinery into a broader Energy Hub that will support energy security and the energy transition while helping to underpin the future viability of the refinery.

The Energy Hub includes:

New Energies Service Station: Featuring renewable hydrogen refuelling and electric vehicle (EV) charging for heavy transport vehicles, the New Energies Service Station will be Australia's first publicly accessible hydrogen refuelling station for commercial vehicles. The project will see a fleet of hydrogen-powered heavy vehicles accessing green hydrogen made from renewable energy and recycled water. The station is under construction with commissioning expected in Q1 2025.

Co-processing of alternative feedstocks to produce low carbon liquid fuels and recycled plastic: Viva Energy is exploring new technologies to develop and supply lower carbon fuels and products and participate in waste oil and plastic recycling. The project involves plans to process up to 50kT of renewable feedstocks at the refinery. Viva Energy and leading waste management company Cleanaway have also announced that they have entered into an agreement to undertake a pre-feasibility assessment of a circular solution for soft plastic and other hard-to-recycle plastics where the refinery and the associated polypropylene plant will play a key role.

Ultra-low Sulphur Gasoline: A major new processing unit is being constructed at the refinery to improve the quality of petrol produced by reducing the maximum sulphur content to 10 parts per million (ppm), in line with new Australian fuel quality standards. Construction is underway with commissioning expected in late 2025.

Wind and solar energy: Viva Energy has secured a 10-year Power Purchase Agreement (PPA) with leading renewable energy generator ACCIONA. The PPA provides a substantial quantity of Viva Energy's power requirements from ACCIONA's operating wind farm assets and will assist in meeting Viva Energy group-wide emission-reduction ambitions. Viva Energy is also planning to construct a solar farm that would power about 10% of the Geelong refinery's electricity needs.

Strategic supply and storage: Construction of three new strategic diesel storage tanks, each with a 30-million litre capacity, is nearing completion, which will provide additional supply security for this critical fuel that is used in transport, agriculture, mining, construction, defence, emergency management and electricity generation.

### 1.1.2 Project objectives

The key objectives of the project are to:

- Provide the infrastructure to enable a new secure and flexible source of gas to the south-eastern Australian domestic gas market.
- Contribute to meeting baseload, peak seasonal and peak day demand for gas in Victoria.
- Ensure that the forecast supply shortfalls in Victoria are avoided – particularly as the project could be developed by winter 2028 which is when the structural shortfalls are expected.
- Support the Geelong Energy Hub vision to contribute to our energy security needs, the energy transition underway and the Geelong and Victorian economies.

### 1.1.3 Project description

Key components of the project include:

- Extension of the existing Refinery Pier with an approximately 570m long angled pier arm, new berth and ancillary pier infrastructure including high pressure gas marine loading arms (MLAs) and transfer lines connecting the seawater discharge points on the FSRU to the refinery seawater intake.
- Continuous mooring of an FSRU at the new Refinery Pier berth to store and convert LNG into natural gas. LNG carriers would moor alongside the FSRU and unload the LNG.
- Construction and operation of approximately 3km of aboveground gas pipeline on the pier and within the refinery site connecting the FSRU to the new treatment facility
- Construction and operation of a treatment facility on refinery premises including injection of odorant and nitrogen (if required) into the natural gas.
- Construction and operation of an underground gas transmission pipeline, approximately 4km in length, connecting to the SWP at Lara.

The Refinery Pier extension would be located to the north-east of Refinery Pier No. 1. The new pier arm would be positioned to allow for sufficient clearance between an LNG carrier berthed alongside the FSRU and a vessel berthed at the existing Refinery Pier berth No. 1.

Dredging of approximately 490,000m$^3$ of seabed sediment would be required to allow for the new berth pocket and swing basin.

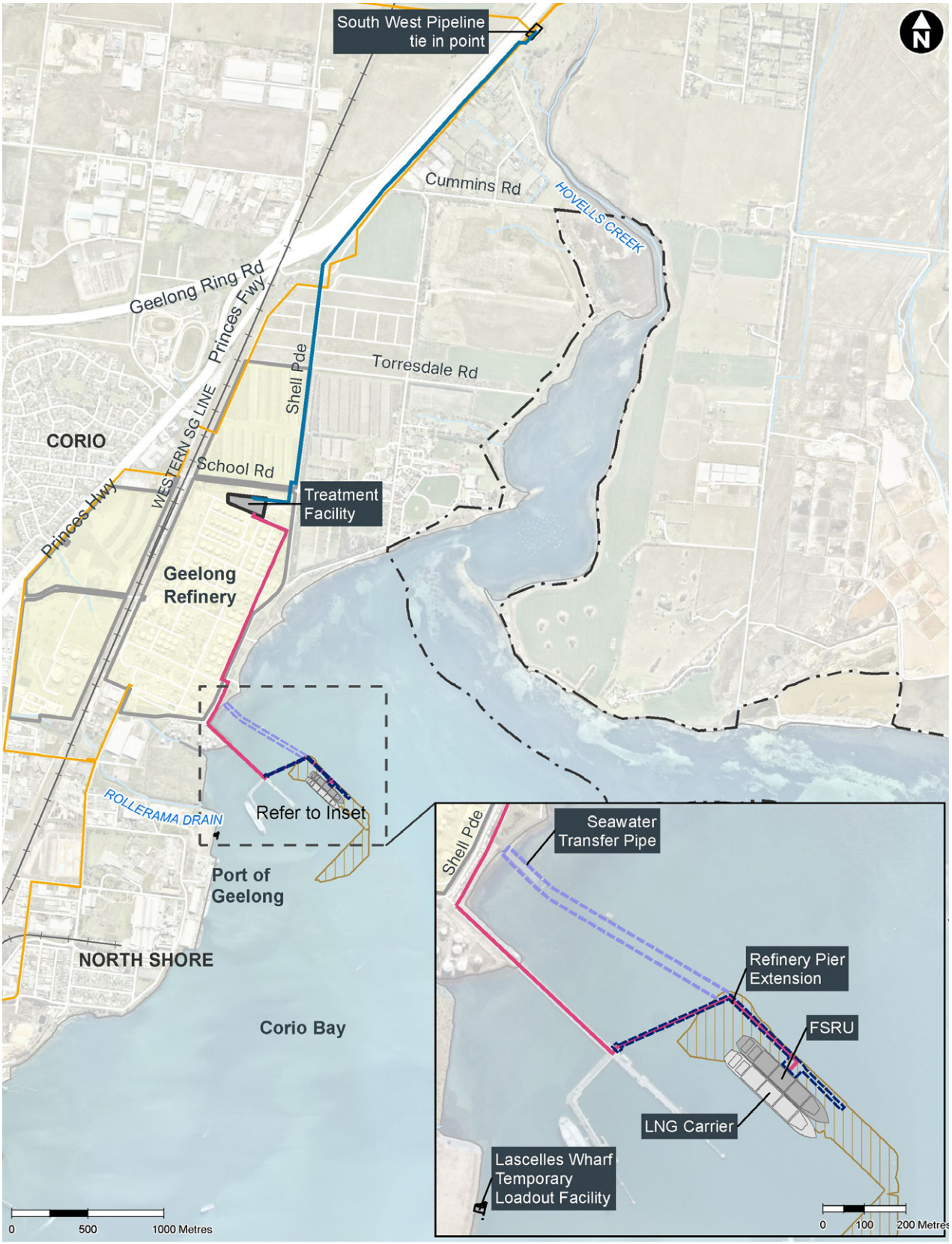
The FSRU would be up to 300m in length and 50m in breadth, with the capacity to store approximately 170,000m$^3$ of LNG. The FSRU would receive LNG from visiting LNG carriers and store it on board in cryogenic storage tanks at approximately -160°C.

The FSRU would receive LNG to the equivalent of up to 160 petajoules per annum (via approximately 45 LNG carriers) depending on demand. The number of LNG carriers would also depend on their storage capacity, which could vary from 140,000 to 170,000m$^3$.

To deliver gas to the Victorian economy, the FSRU would convert LNG back into a gaseous state by heating the LNG using seawater (a process known as regasification). The natural gas would then be transferred through the aboveground pipeline from the FSRU along Refinery Pier and through the refinery site to the treatment facility where odorant and nitrogen would be added, where required, to meet Victorian Transmission System (VTS) gas quality specifications. Nitrogen injection would occur when any given gas cargo needs to be adjusted (diluted) to meet local specifications. Odorant is added as a safety requirement so that the normally odourless gas can be smelt when in use. From the treatment facility, the underground section of the pipeline would transfer the natural gas from the treatment facility to the SWP tie-in point at Lara.

Construction and commissioning of the project is estimated to take up to 18 months. The project is anticipated to operate for approximately 20 years.

An overview of the project and its components is shown in **Figure 1-1**. Further detail on project construction and operation is available for reference in the original EES Chapter 4: *Project description.*


South West Pipeline tie in point
Cummins Rd
HOVELLS CREEK
Geelong Ring Rd
Princes Fwy
Shell Pde
Torresdale Rd
WESTERN SG LINE
CORIO
School Rd
Princes Hwy
Treatment Facility
Geelong Refinery
ROLLERAMA DRAIN
Refer to Inset
Port of Geelong
NORTH SHORE
Corio Bay
0
500
1000 Metres
Seawater Transfer Pipe
Refinery Pier Extension
FSRU
LNG Carrier
Lascelles Wharf Temporary Loadout Facility
0
100
200 Metres
Aboveground Pipeline
Underground Pipeline
Seawater Transfer Pipe
Refinery Pier Extension
Dredged Area
South West Pipeline
Port Phillip Bay (Western Shoreline) and Bellarine Peninsula Ramsar Site
Viva Energy Owned Land
Rail
MELBOURNE
GEELONG

### 1.1.4 Project location

The project would be located in Corio in the City of Greater Geelong, 75km south-west of Melbourne. The project area is situated adjacent to, and on, Viva Energy's Geelong refinery site, within a heavily developed port and industrial area on the western shores of Corio Bay between the Geelong suburbs of Corio and North Shore. The Geelong central business district is located approximately 7km to the south of the project. The proximity of this project to Melbourne and the VTS means that gas would be available where it is needed most without the need for significant investment in transmission infrastructure upgrades.

Co-locating the project alongside the existing Geelong refinery and within the Port of Geelong offers significant opportunity to minimise potential environmental effects and utilise a number of attributes that come with the port and industrial setting.

Corio Bay is the largest bay in the south-western corner of Port Phillip and is a sheltered, shallow basin at the western end of the Geelong Arm with an area of 43km$^2$. The Point Wilson/Limeburners Bay section of the Port Phillip Bay (Western Shoreline) and Bellarine Peninsula Ramsar site is located along the northern shoreline of Corio Bay, approximately one kilometre to the north-east of the project.

The Port of Geelong has been in operation for more than 150 years and is the largest industrial bulk cargo port in Victoria with over 1000 ship visits annually (including TT-Line) handling more than 14 million tonnes of product. Geelong's shipping channels extend 18 nautical miles through Corio Bay from Point Richards through to Refinery Pier. Ports Victoria (incorporating the former Victorian Regional Channels Authority (VRCA)) manages commercial navigation in the port waters in and around Geelong and is responsible for the safe and efficient movement of shipping, and for maintaining shipping channels and navigation aids. The channels are man-made having been deepened and widened through periodic dredging to support port trade development. Refinery Pier is the primary location within the Port of Geelong for movement of bulk liquids. Vessels up to 265m in length currently utilise the four berths at Refinery Pier which service Viva Energy refinery operations. The majority of ship visits to the port are to Refinery Pier, with Viva Energy accounting for over half of the trade through the Port of Geelong.

Refinery Pier is located on Crown land leased and managed by GeelongPort. The existing pier and associated landside infrastructure, owned by GeelongPort, are zoned Port Zone (PZ) under the Greater Geelong Planning Scheme (GGPS). Onshore of the pier, to the east of Shell Parade within the PZ the land is freehold owned by GeelongPort. Land for the proposed pier extension is currently unreserved Crown land.

The Geelong refinery has been in operation since 1954 with both the refinery and the co-located Viva Energy Polymers plant (formerly LyondellBasell) being licensed Major Hazard Facilities. A range of other industrial activities are located in the port environs including wood fibre processing and chemical, fertiliser and cement manufacture.

The Geelong refinery site and undeveloped land immediately to the north, owned by Viva Energy, are zoned Industrial 2 Zone (IN2Z) under the GGPS.

To the north of the refinery along the proposed pipeline corridor, the area is predominantly rural. There are several other existing Viva Energy-owned underground pipelines running between the refinery and the area where the proposed gas pipeline would connect to the SWP at Lara. The proposed pipeline route follows already disturbed pipeline corridors where possible, through a mix of land uses.

The former New Corio Estate subdivision now known as the Corio Native Grassland Reserve is zoned partly Farming Zone (FZ) and partly Public Conservation and Resource Zone (PCRZ) and is covered by an Environmental Significance Overlay (ESO4). Beyond this the land on either side of the Princes Freeway is zoned Farming Zone (FZ) or Rural Living Zone (RLZ) and is actively cultivated for crops or animal farming.

The proposed SWP tie-in point is located within the Hovells Creek Reserve zoned Public Park and Recreation Zone (PPRZ) and covered by an Environmental Significance Overlay (ESO2).

## 1.2 Project delivery

The project would be delivered by Viva Energy (the proponent). This section provides further information on the proponent and Viva Energy's commitments and policies in regards to health, safety and the environment, as well as the timeframe in which the project is proposed to be delivered.

### 1.2.1 Proponent

The proponent for the project is Viva Energy Gas Australia Pty Ltd, a wholly owned subsidiary of Viva Energy Group Limited.

Viva Energy is proudly one of the largest suppliers of liquid fuels and lubricants to the Australian market, supplying approximately 25 percent of the country's liquid fuel demands, and over 50 percent of Victoria's requirements.

Viva Energy's Geelong refinery is one of Australia's last two oil refineries. Geelong refinery is classified as Major Critical infrastructure under the Victorian *Emergency Management Act 2017* and as Critical infrastructure under the commonwealth *Security of Critical Infrastructure Act 2018*. In 2023, Viva Energy refinery secured a strategically significant contract with the Department of Defence to be the exclusive supplier of aviation, marine and ground fuels to the Australian Defence Force.

Viva Energy also owns and operates the largest retail service station network across Australia. Viva Energy is a major employer with over 14,000 team members across the country and, through our operations, a substantial contributor to the Australian economy.

Viva Energy believes that it has a critical role to play in Australia in both delivering ongoing energy security as well as supporting the energy transition. Viva Energy is providing the infrastructure necessary to ensure the economy is able to keep operating safely, affordably and securely, while bringing on new technologies and infrastructure to transition to a lower carbon economy.

With respect to energy transition, Viva Energy has developed a suite of projects to commercialise and introduce new lower carbon solutions in the transport market. These include New Energies Service Station in Geelong, EV charging infrastructure across parts of the retail network, the importation and planned manufacture of fuels made from biogenic feedstocks (including biofuels, renewable diesel and sustainable aviation fuel) and the recycling of waste streams such as plastics and used tyres into fuels and plastic products.

Viva Energy has also made commitments around its own carbon emissions profile. In addition to a long-term target of net zero emissions by 2050, Viva Energy is also committed to reducing the energy intensity of the Geelong refinery, and to achieving net zero emissions in our non-refining business by 2030.

The Geelong refinery is Viva Energy's largest operation, employing more than 900 people. The refinery and associated operations have been part of the local Geelong community since 1954, supplies more than half of Victoria's fuel needs and injects more than $250 million each year into the local economy through wages and services.

As a longstanding member of the local community, Viva Energy has an ongoing and active community program. In addition to our national community partners, such as CareFlight, the Royal Flying Doctor Service and the Koorie Heritage Trust, Viva Energy also has partnerships with a range of local Geelong community organisations. These include local grassroots sporting clubs and the Geelong Cats Football Club – sponsoring their inaugural Australian Football League Women's (AFLW) team. Social enterprise genU is also engaged to manage the refinery cafeteria and provide gardening services.

The Geelong refinery is also the sole local manufacturer of low aromatic fuel (LAF) which helps to prevent substance misuse in regional and remote communities. Viva Energy has been manufacturing and supplying LAF to northern Australia since 2014 in support of the commonwealth's National Indigenous Advancement Agency.

#### 1.2.1.1 Health, safety and environmental policy

Viva Energy conducts its operations under an integrated Health, Safety, Security & Environmental Management System (HSSE MS). The HSSE MS has been designed to facilitate compliance with the Australian regulatory regimes of the relevant jurisdictions within which the company operates. It is also aligned with the Viva Energy values of Integrity, Responsibility, Curiosity, Commitment and Respect.

Viva Energy has a systematic approach to HSSE management in order to achieve continuous performance improvement. To this end, Viva Energy manages these matters as critical business activities, sets standards and targets for improvement; measures, appraises and reports on performance and supports active discussion to promote learning and continuous improvement. This is further supported by the Viva Energy "Commitment to HSSE", as expressed in the company HSSE Policy, which sets out the commitment to pursuing 'Goal Zero' – no harm to people or the environment.

Viva Energy has identified priorities and focus areas

in managing their environmental footprint including:

- Greenhouse gas emissions and energy efficiency
- Air quality
- Water management
- Waste and recycling
- Land management
- Noise and odours
- Sustainable communities.

Across all businesses, Viva Energy has adopted the HSSE MS which provides a essential reference document for personnel in the planning, implementation and operation of business activities, with references to the relevant processes that are in place to meet the HSSE objectives and obligations. Business managers, in conjunction with the HSSE environment team, ensure the activities and facilities that they are responsible for meet the requirements of the:

- Regulatory approvals (e.g., Licence conditions)
- Viva Energy Environmental Manuals and subsidiary guidance
- Facility Environmental Management Manuals.

#### 1.2.1.2 Environmental performance

Viva Energy is committed to protecting the environment and minimising any potential environmental impacts arising from its operations or its products. The Viva Energy HSSE Policy outlines its commitment to operating in an environmentally responsible manner. The environmental aspects of Viva Energy's operations are governed by environmental regulations, and subject to project and site-specific environmental permits and approvals, at both the Commonwealth and State government levels which are managed in accordance with the HSSE MS.

Viva Energy has a dedicated and experienced team of in-house environmental professionals and leverages the specialist technical expertise of environmental consultants. Viva Energy has a long history of operating Major Hazard Facilities and executing significant projects in an environmentally responsible manner.

For major facilities, including the Geelong refinery, environmental licence compliance and performance monitoring results are reported publicly. Recent information on Viva Energy's environmental performance and a summary of environmental performance data is available within the 2023 Sustainability Report and 2023 Annual Report. This information can be found at the following links respectively:

**https://www.vivaenergy.com.au/sustainability/environment/environmental-reporting**

**https://www.vivaenergy.com.au/sustainability**

**https://www.vivaenergy.com.au/investor-centre/company-reports/2023/2023-company-reports**

### 1.2.2 Project timeline

The timeline for the planning, design, construction, and operation of the project is shown in **Figure 1-2** below. This timeline is subject to receiving all required approvals within certain timeframes and the company making a Final Investment Decision.

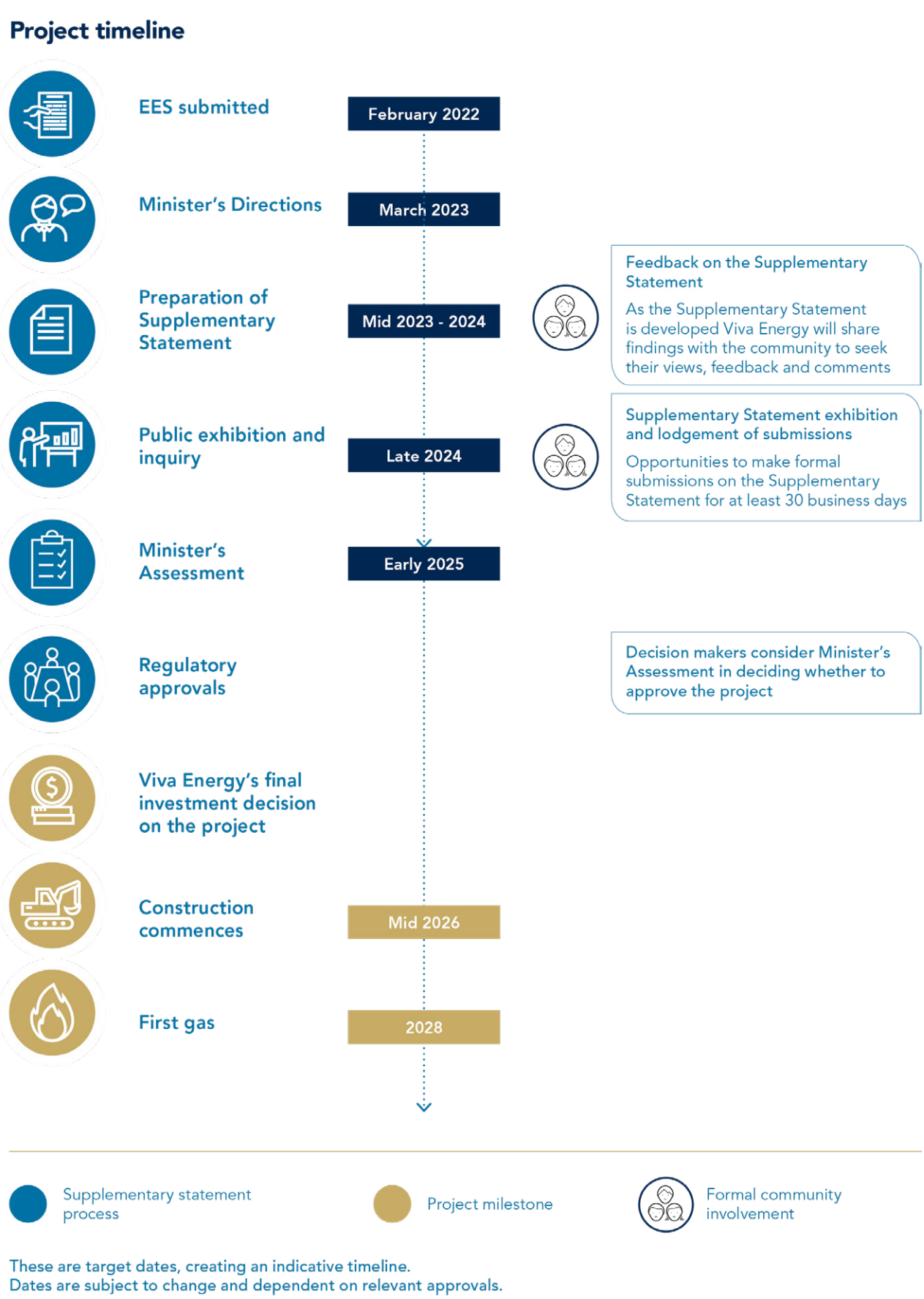



Figure 1-2 Project timeline

## 1.3 Supplementary Statement

Victoria's Environment Effects Act sets out the process under which the Victorian Minister for Planning may require the proponent of a project to prepare a Supplementary Statement. This section discusses the requirement for a Supplementary Statement, the Supplementary Statement's purpose and the approach to the Supplementary Statement for the project.

### 1.3.1 Requirement for a Supplementary Statement

In March 2023, the Victorian Minister for Planning directed that a Supplementary Statement was required for the Viva Energy Gas Terminal Project in accordance with sections 5 and 8C(2) of the Environment Effects Act. The Supplementary Statement is required to complete the assessment of the project's potential environmental effects on the marine environment, noise, air quality and Aboriginal cultural heritage in accordance with the Minister's Directions and inform decision making.

The procedures and requirements that apply to the Supplementary Statement process were published in the Minister's Directions. Read more about the Supplementary Statement process for the project at **https://www.planning.vic.gov.au/environmental-assessments/browse-projects/viva-energy-gas-terminal**.

The main steps in the Supplementary Statement process within the broader assessment and approvals framework for the project are shown in **Figure 1-3**.

### 1.3.2 Purpose of the Supplementary Statement

The purpose of the Supplementary Statement is to provide clear and detailed responses to the matters raised in the Minister's Directions for the Supplementary Statement to inform an assessment by the Minister for Planning of the project under the Environment Effects Act. The Minister's assessment will also be informed by public submissions on the completed EES and the additional Supplementary Statement, the IAC report dated 5 October 2022, and the report of an inquiry to be appointed under the Environment Effects Act in relation to the Supplementary Statement.

In preparing the Supplementary Statement, Viva Energy has implemented a study program to satisfy the objectives as stated in the Minister's Directions. Specifically, in undertaking the supplementary studies, Viva Energy has:

- Provided an assessment of the environmental effects of the project on the marine environment, noise, air quality and Aboriginal cultural heritage with respect to the consolidated recommendations of the IAC for further work contained in **Table 1-1** of the Minister's Directions. Consolidated and integrated the results of the further work to assess the environmental effects of the project on the marine environment, noise, air quality and Aboriginal cultural heritage with the key outcomes of the EES studies, having regard to relevant legislative and policy provisions
- Facilitated third party involvement in the Supplementary Statement process.

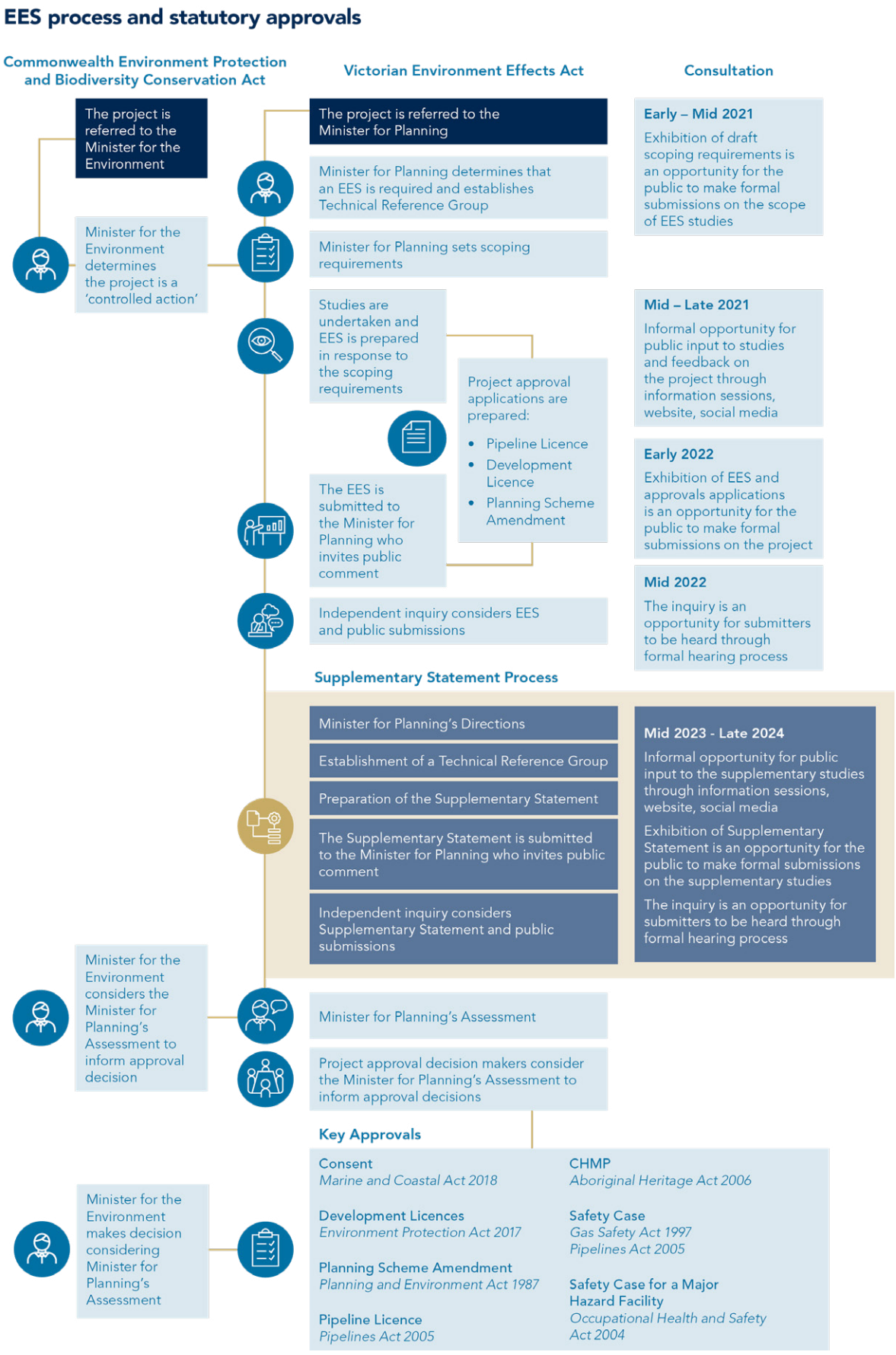



Figure 1-3 EES process and statutory approvals

### 1.3.3 Approach to the Supplementary Statement

#### 1.3.3.1 Minister's Directions

The Minister's Directions required Viva Energy to prepare a Supplementary Statement to provide an extended assessment of the environmental effects of the project on the marine environment, noise, air quality and Aboriginal cultural heritage with respect to the consolidated recommendations of the IAC for further work. The consolidated recommendations for further work, as presented in the Minister's Directions, is presented in **Table 1-1** below.

Table 1-1 IAC consolidated recommendations for further work

| Recommendation | Further work to be undertaken |
|---|---|
| Recommendation 1 | Undertake further survey work to better establish the existing environment and the impacts of existing wastewater discharges from the refinery to enable better understanding of project impacts. The survey work should:<br>a. Cover intertidal, littoral and subtidal habitats that could potentially be affected by the project including the Ramsar site.<br>b. Update seagrass mapping to include the intertidal zone and information on the different seagrass species.<br>c. Be carried out over a period of at least 12 months before construction or dredging starts, with a minimum of four sampling runs (one in each season) to address seasonal variability.<br>d. Establish a better baseline for monitoring during and after the project to confirm predicted outcomes on shoreline and benthic communities, including seagrasses and macroalgae. |
| Recommendation 2 | Refine the calibration of the regional hydrodynamic model so that it more accurately reproduces observed water levels, currents, tidal range and tidal exchange in Corio Bay. Consider:<br>a. The selection of the most appropriate wind data.<br>b. More detailed horizontal resolution to represent the Hopetoun and North Channels more accurately.<br>c. More detailed vertical resolution to represent discharge plumes in shallow waters more accurately.<br>d. The effects of the presence of the FSRU currents.<br>e. Peer review of the model calibration. |
| Recommendation 3 | Re-run the wastewater discharge modelling with revised inputs based on the refined hydrodynamic model. Consider:<br>a. Revising the nearfield modelling of discharges from the diffuser to address the matters raised by Dr McCowan in his written evidence (D75).<br>b. The IAC's recommended default guideline values for chlorine discharges (7.2 microgram per litre in Corio Bay generally, including the project area, 2.2 microgram per litre at the Ramsar site). |
| Recommendation 4 | Consider undertaking further targeted investigations into the effects of existing chlorine discharges from the refinery to confirm likely project impacts resulting from chlorination by-products, including measurement of chlorination by-product concentrations in:<br>a. Seawater.<br>b. Biota that have high susceptibility to contamination. |
| Recommendation 5 | Re-run the entrainment modelling with revised inputs based on the refined hydrodynamic model. |

| Recommendation | Further work to be undertaken |
|---|---|
| Recommendation 6 | Re-run the sediment transport modelling with revised inputs based on the refined hydrodynamic model. Consider including a 'worst case' scenario for sediment fractions and settling rates which includes the largest expected proportions of fine and very fine materials that have the slowest expected settling velocities. |
| Recommendation 7 | Undertake further assessment of dredging impacts on seagrass based on:<br>a. The revised sediment transport modelling.<br>b. Revised light thresholds of 10 percent to 20 percent surface irradiance (20 percent surface irradiance should be applied to any sediment plumes that extend to the Port Phillip Bay (western shoreline) and Bellarine Peninsular Ramsar Site).<br>c. The updated seagrass mapping (Rec.1b). |
| Recommendation 8 | Confirm the EES conclusion that dredging will not impact the Ramsar site after considering:<br>a. The revised marine modelling.<br>b. The revised assessment of impacts on seagrass. |
| Recommendation 9 | Undertake further assessment of impacts on threatened and migratory bird species by:<br>a. Establishing a complete list of threatened and migratory bird species that could potentially be affected by the project (and consider including the black swan).<br>b. Having the list peer reviewed.<br>c. Undertaking further analysis of the targeted shorebird surveys, to determine whether the surveyed sites individually or collectively support enough individuals of any particular migratory bird species to be an important site for that species in Australia or the East-Australasian Flyway.<br>d. Considering the revised marine modelling. |
| Recommendation 10 | Undertake the further assessment of noise impacts set out in mitigation measure MM-NV05. |
| Recommendation 11 | Undertake sensitivity testing on the air quality modelling to confirm that operational impacts on air quality would be acceptable. Consider:<br>a. The significance of the wake effects of the FSRU.<br>b. A 'worst case' scenario for air emissions (but based on the use of best available technology).<br>c. The implications of bubble limits and stack specific limits for sensitive receptors. |
| Recommendation 12 | Undertake a cultural values assessment to identify intangible values relevant to the project (both onshore and offshore in Corio Bay) and an underwater Aboriginal cultural archaeological assessment for the proposed dredging areas to inform an updated cultural heritage management plan. Review and update the mitigation measures and incorporated document to include any necessary changes to implement the updated cultural heritage management plan when approved. |

A draft study program was prepared by Viva Energy and submitted to the Department of Transport and Planning (DTP) for review. DTP engaged an independent peer reviewer who reviewed and provided advice on the technical adequacy of the study program and Supplementary Statement documentation. DTP also convened a targeted inter-agency Technical Reference Group (TRG). The TRG provided advice on the technical adequacy of the study program, clarification regarding matters to be investigated and documented and technical advice on the Supplementary Statement documentation.

#### 1.3.3.2 Supplementary environmental impact assessment

To ensure that all key issues identified in the Minister's Directions were addressed in the Supplementary Statement, five specialist technical studies have been undertaken in response to the consolidated recommendations of the IAC. The five specialist technical studies are:

- Supplementary marine environment impact assessment.
- Supplementary threatened and migratory birds impact assessment.
- Supplementary air quality impact assessment.
- Supplementary noise impact assessment.
- Underwater Aboriginal cultural archaeological assessment.

The findings of these studies are provided in the technical reports attached to this Supplementary Statement and summarised in Chapters 3 to 7 (refer to **Figure 1-4**).

Additionally, Wadawurrung Traditional Owners Aboriginal Corporation (WTOAC) has been sponsored by Viva Energy to undertake a Cultural values assessment (CVA) in order to fulfil the requirement of Recommendation 12 of the Minister's Directions.

A summary of the CVA process is provided in Chapter 8.

#### 1.3.3.3 Environmental Management Framework

An Environmental Management Framework (EMF) was developed as part of the EES. The EMF outlines the environmental requirements of the project and how environmental effects are proposed to be managed. The framework sets out the mitigation measures that would be implemented by the proponent to avoid, minimise or manage potential adverse effects of the project and identifies the relevant statutory approvals that will give effect to these measures. Roles and responsibilities of key stakeholders are defined in the EMF to ensure that there are clear accountabilities for the implementation of the environmental management requirements.

Only the sections of the EMF on mitigation measures and monitoring relevant to the further work undertaken by Viva Energy as part of the Supplementary Statement have been amended, all other sections remain unchanged and valid. The initial set of mitigation measures provided in the EES has been updated based on Viva Energy's Part C Submission to the IAC public hearing, the adopted recommendations of the IAC Report, Appendix G and the outcomes of the supplementary studies.

The mitigation measures will assist in informing the conditions which may be required by relevant statutory authorities. Viva Energy and it's contractors would be responsible for implementation of mitigation measures and compliance with conditions imposed by statutory authorities. Contractual arrangements with contractors responsible for construction, operation and decommissioning of the project will include requirements for contractors to adhere to specified mitigation measures.

There has been no change to the statutory approvals which the project would require to proceed. Furthermore, there has been no change to the Pipeline Licence and Development Licence applications exhibited with the EES. The draft Planning Scheme Amendment has been updated and will be exhibited with this Supplementary Statement.

Chapter 9: *Environmental Management Framework* provides the mitigation measures and monitoring requirements relevant to the further work undertaken in accordance with the Minister's Directions.

**Consultation**

Viva Energy undertook an extensive program of engagement and consultation activities during preparation of the EES to ensure that the community and interested stakeholders were informed, involved and able to contribute to the development of the project.

The overall objectives, principles and framework of the project Consultation Plan remain the same, however Viva Energy has reflected on, and learnt from, the experience of the EES consultation process. The approach, as described in the Supplementary Statement Consultation Activities Plan, has been updated taking onboard feedback from stakeholders and the IAC.

Activities have been focused on facilitating meaningful stakeholder involvement in the supplementary assessment process and providing opportunities for genuine engagement on the further work required by the Minister's Directions.

Community consultation and stakeholder engagement would continue to be undertaken during all stages of the project. This consultation program is described in Chapter 2: *Stakeholder and community engagement*.

## 1.4 Supplementary Statement structure

Technical studies undertaken for the Supplementary Statement have been identified based on the consolidated recommendations of the IAC. The level of detail of investigation for the Supplementary Statement technical studies is consistent with the approach set out in the Supplementary Statement Study Program and is adequate to inform an assessment by the Minister for Planning of the project under the Environment Effects Act.

The structure of this Supplementary Statement is shown in **Figure 1-4**.

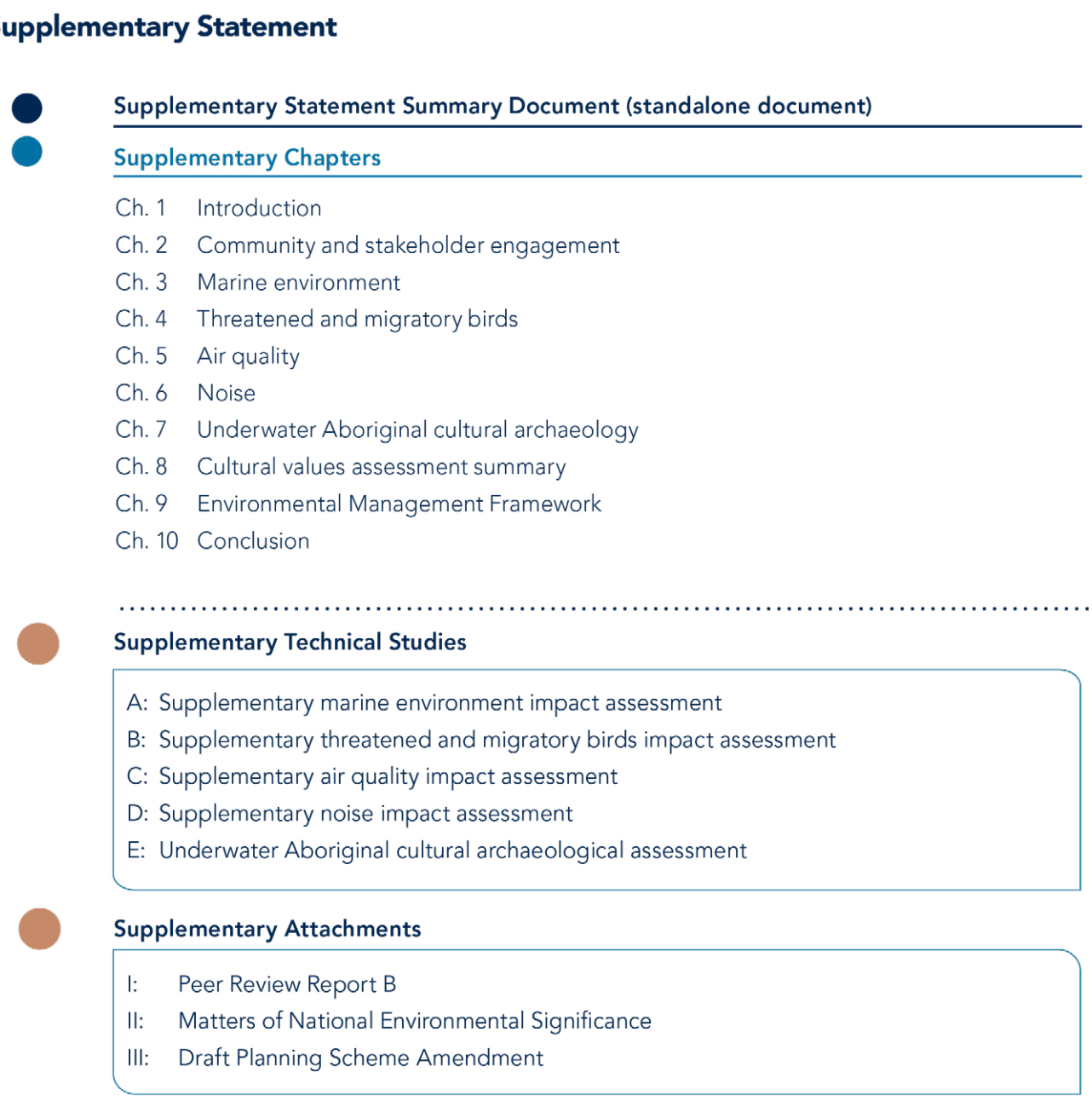



Figure 1-4 Supplementary Statement structure