KWINANA SWIFT POWER STATION EXPANSION PROJECT

GREENHOUSE GAS MANAGEMENT PLAN

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ACKNOWLEDGEMENT OF COUNTRY

In the spirit of reconciliation, Western Energy Pty Ltd and Preston Consulting Pty Ltd acknowledge that this Project is proposed on the lands of the Whadjuk People of the Noongar Nation. We recognise their rich culture and their continuing connection to land and waters, and pay our respects to their Elders past, present and emerging.

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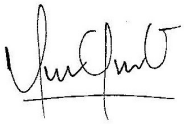
Authors	Marilyn Quintero - Preston Consulting Pty Ltd		31/07/2025
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EXECUTIVE SUMMARY

Western Energy Pty Ltd (Perth Energy), a subsidiary of AGL Energy Limited (AGL), is proposing to construct and operate the Kwinana Swift Power Station Expansion Project (Proposal). The Kwinana Swift Power Station (the existing plant) is comprised of four gas-fired turbine generator units coupled to two electrical generators, with a generation capacity of 120 Megawatts (MW). The Proposal is for the expansion of the existing plant by up to four additional dual-fuel fired turbine generator units, increasing the plant generation capacity to 370 MW.

The Proposal will provide peaking power supply for the South West Interconnected System (SWIS) to support the State Government's objectives to decarbonise the network. The Proposal will supply reliable and flexible electricity to the SWIS, necessary to satisfy demand fluctuations resulting from increasing renewable penetration in the SWIS.

Greenhouse Gas (GHG) emissions from the Proposal will be assessed by the Environmental Protection Authority (EPA), as emissions are predicted to exceed the 100,000 tonnes (t) per annum threshold for carbon dioxide equivalent (CO_2-e) outlined within the EPA's *Greenhouse Gas Emissions Factor Guideline* (GHG Guidelines) (EPA, 2024).

This GHG Management Plan (GHGMP), while not explicitly required by the EPA, has been developed to provide detailed information required for the EPA's assessment of GHG impacts from the Proposal under Part IV of the *Environmental Protection Act 1986* (WA). This approach is consistent with the EPAs GHG Guidelines (EPA, 2024). A summary of the Proposal details and the GHGMP are provided in Table ES1.

Table ES1: Summary of GHGMP

Proposal name	Kwinana Swift Power Station Expansion Project
Proponent name	Western Energy Pty Ltd
Proposal description and scope	Construct and operate an expansion to the existing Kwinana Swift Power Station, comprising up to four additional dual-fuel fired turbine generator units, coupled to one electrical generator each, which increase generation capacity from 120 MW to up to 370 MW. The Proposal is located in Kwinana, WA.
Purpose of this GHGMP	To provide the Proposal GHG emissions estimates and management and monitoring measures to demonstrate that GHG emissions will be reduced over the life of the Proposal, in accordance with the EPA's objective outlined in the GHG Emissions Environmental Factor Guideline (EPA, 2024).
Emissions estimates	**Construction Emissions** Construction activities required for the Proposal are minor and relate primarily to the movement of light vehicles and assembly of infrastructure over a relatively short period. Emissions from these activities are not expected to be material and therefore have not been included in the GHG emissions estimates. **Operational Emissions** **Scope 1:** 191,763 t CO_2-e per annum (/a) on average 8,629,357 t CO_2-e Gross GHG Emissions[1] over the life of the Proposal 3,886,834 t CO_2-e Nett GHG Emissions[2] over the life of the Proposal **Scope 2:** 530 t CO_2-e/a on average 23,850 t CO_2-e total over the life of the Proposal **Scope 3:** 22,462 t CO_2-e /a on average

	1,010,793 t CO_2-e over the life of the Proposal
Trajectory of emissions reductions	The Proposal will provide peaking power supply for the SWIS to support the state Governments objectives to decarbonise the network. The demand for electricity from the Proposal is based on a number of factors, such as consumers, environmental conditions and the rate at which coal and diesel based power generation is retired and build-out of new solar and wind generation. There is therefore uncertainty about the Proposal's operational throughput and resulting emissions trajectory. The emissions trajectory presented in this GHGMP has been calculated based on consumer demand projections and grid demand, factoring in the retirement of old technology. Demand for power from the Proposal will fluctuate but will be enduring and persist beyond 2050. The Proposal will satisfy an electricity demand that would otherwise be satisfied with more GHG emissions intensive technology, therefore the overall GHG emissions from the SWIS will be reduced in comparison to the current operating scenario. The Proposal will present a low emissions intensity power generation option compared to current technology. If the retirement of old technology is expedited the demand for power from the Proposal could be higher than current projections. For the Proposal to support decarbonisation of the SWIS there must be flexibility in its operational capacity. On this basis, a baseline that represents operation at the expected maximum reasonable emissions trajectory has been chosen to allow flexibility in production without penalty. Perth Energy is exploring options to improve the emissions intensity of the Proposal and will continue to do so over the life of the Proposal.
Other statutory decision-making processes which require reduction in GHG emissions	The pathway to net zero emissions is regulated in Australia under the Safeguard Mechanism. The Safeguard Mechanism is designed to encourage/force emitters to net-zero emissions by 2050. The Safeguard Mechanism applies a sectoral baseline to grid-connected electricity generators therefore a facility specific Safeguard Mechanism Baseline has not been modelled in this GHGMP. The Proposal will supply power to the SWIS which is subject to the Commonwealth of Australia's Renewable Energy Target (RET). The RET is designed to reduce emissions of GHG in the electricity sector by encouraging additional generation of electricity from sustainable and renewable sources.
Key components in the GHGMP	Perth Energy has investigated several dual-fuel turbine generator technology options to identify the best practice technology suitable for the Proposal. Parameters that were considered include: • High energy density per square metre MW/m^2; • Low nitrogen oxide (NOx) emissions; • High efficiency; • Flexible and reliable operation; • Fast-start; • Very-low minimal-generation; • Factors contributing to system stability and reliability; • Dual fuel (natural gas and diesel); • Low cost generation ($/MW); • Maintenance and operational requirements; • High availability; • Firm generation (when renewables not generating); • Proven technology in WA (for construction, operation and maintainability); • Ability to operate on hydrogen in the future; and • Ability to operate on bio-diesel fuel in the future. Additionally, the Proposal commits to consider the following parameters over the life of the Proposal: • Use of new high-efficiency aero-derivative or light-industrial gas turbine technology; • Selected world-leading original equipment manufacturer (OEM) for gas turbine supply and commissioning; • Through-life emissions/efficiency part of technology selection process; and • Performance Guarantees in construction and operation. Perth Energy is determined to utilise the best-practice technology that is suitable for the Proposal application. The choice of technology is limited by site-specific factors

	including climate, availability, packaging and compliance with other environmental constraints such as air quality. The chosen technology may therefore not represent best-practice in a global context of power generation; however, the Proposal will use the latest models of the chosen technology that is best suited for its use case. In the event that Perth Energy is not able to meet their GHG emission targets, and/or where carbon emissions cannot be avoided or reduced to enable Perth Energy to achieve its objectives, Perth Energy will offset the remaining GHG emissions.
GHGMP reviews and reporting	Annual review and as required by relevant approvals
Construction phase	24 – 36 months
GHGMP required pre-construction?	Yes
Operations phase	45 years from commencement of operations

[1]Gross GHG emissions are the total potential emissions from the Proposal based on the projected demand over the life of the Proposal.
[2]Nett GHG emissions are the Gross GHG Emissions minus offsets predicted to implemented over the life of the Proposal.

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1 CONTEXT, SCOPE AND PURPOSE

1.1 PROPONENT, PROPOSAL DESCRIPTION AND SCOPE

Table 1 states the proponent, proposal description and scope of the Proposal.

Table 1: Summary of proposal

Proposal name	Kwinana Swift Power Station Expansion Project
Proponent name	Western Energy Pty Ltd
Proposal description and scope	Construct and operate an expansion to the existing Kwinana Swift Power Station, comprising up to four additional dual-fuel fired turbine units coupled to one electrical generator each, which increase generation capacity from 120 MW to up to 370 MW. The Proposal is located in Kwinana, Western Australia (WA).
Purpose of this GHGMP	To provide the Proposal GHG emissions estimates and management and monitoring measures to demonstrate that GHG emissions will be reduced over the life of the Proposal, in accordance with the EPA's objective outlined in the GHG Emissions Environmental Factor Guideline (EPA, 2024).

The WA State Government has committed to retiring all State-owned coal-fired power stations by 2030, including Collie, Muja C, and Muja D. These facilities currently contribute a substantial share of the South West Interconnected System's (SWIS) MWh generation, system inertia, and peak capacity. The June 2025 Australian Energy Market Operator (AEMO) Wholesale Electricity Market (WEM) Electricity Statement of Opportunities (ESOO) flags further uncertainty around the privately owned Bluewaters Power Station and the retirement of Synergy's gas-fired units at Pinjar.

This confluence of retirements represents a significant loss of long-duration, fast-response firming capacity and essential system services. While a wave of four-hour battery projects has been announced, these assets are limited in both energy duration and system strength capabilities.

Western Energy Pty Ltd (Perth Energy), a subsidiary of AGL Energy Limited (AGL) has identified an opportunity to expand firming capacity in response to the scheduled retirement of State-owned coal-fired generators. This initiative aligns with the Western Australian Government's energy transition strategy and supports the decarbonisation of the South West Interconnected System (SWIS) under the State Sectoral Emissions Reduction Strategy (SERS). To meet this emerging need, AGL proposes to construct and operate the Kwinana Swift Power Station Expansion Project (the Proposal).

The existing Kwinana Swift Power Station comprises four dual-fuel turbine generator units coupled to two electrical generators, with a generation capacity of 120 megawatts (MW). The Proposal involves expanding the plant by up to four additional dual-fuel turbine generator units, increasing total generation capacity to 370 MW.

The Proposal will provide peaking power supply for the SWIS to support the state Governments objectives to decarbonise the network. The Proposal will supply reliable and flexible electricity to the SWIS, necessary to satisfy demand fluctuations resulting from increasing renewable penetration in the SWIS.

The Proposal is located in Kwinana, WA. Kwinana is an industrial area approximately 40 kilometres (km) south of Perth (Figure 1). The Proposal site is classified as zoning 'Town Planning Scheme (TPS) No. 2 General Industry'. Use class is also classified as general industry and is a permitted use. The Proposal complies with TPS policies for TPS No. 2 General Industry.

The Proposal will be developed within a development envelope that consists of cleared land that has had civil works previously undertaken. The Proposal is situated immediately adjacent to the existing plant and in proximity to significant industrial infrastructure and activities of the Kwinana industrial area (Figure 2).

The Proposal includes construction and operation of up to four dual-fuel powered turbines connected to one electrical generator each. These new gas-turbine units are flexible, operating on natural gas, distillate, liquefied natural gas (LNG), liquefied petroleum gas (LPG) and/or hydrogen. An indicative turbine unit is presented below (Figure 3). The scope of the Proposal is for the additional turbines only.

Legend

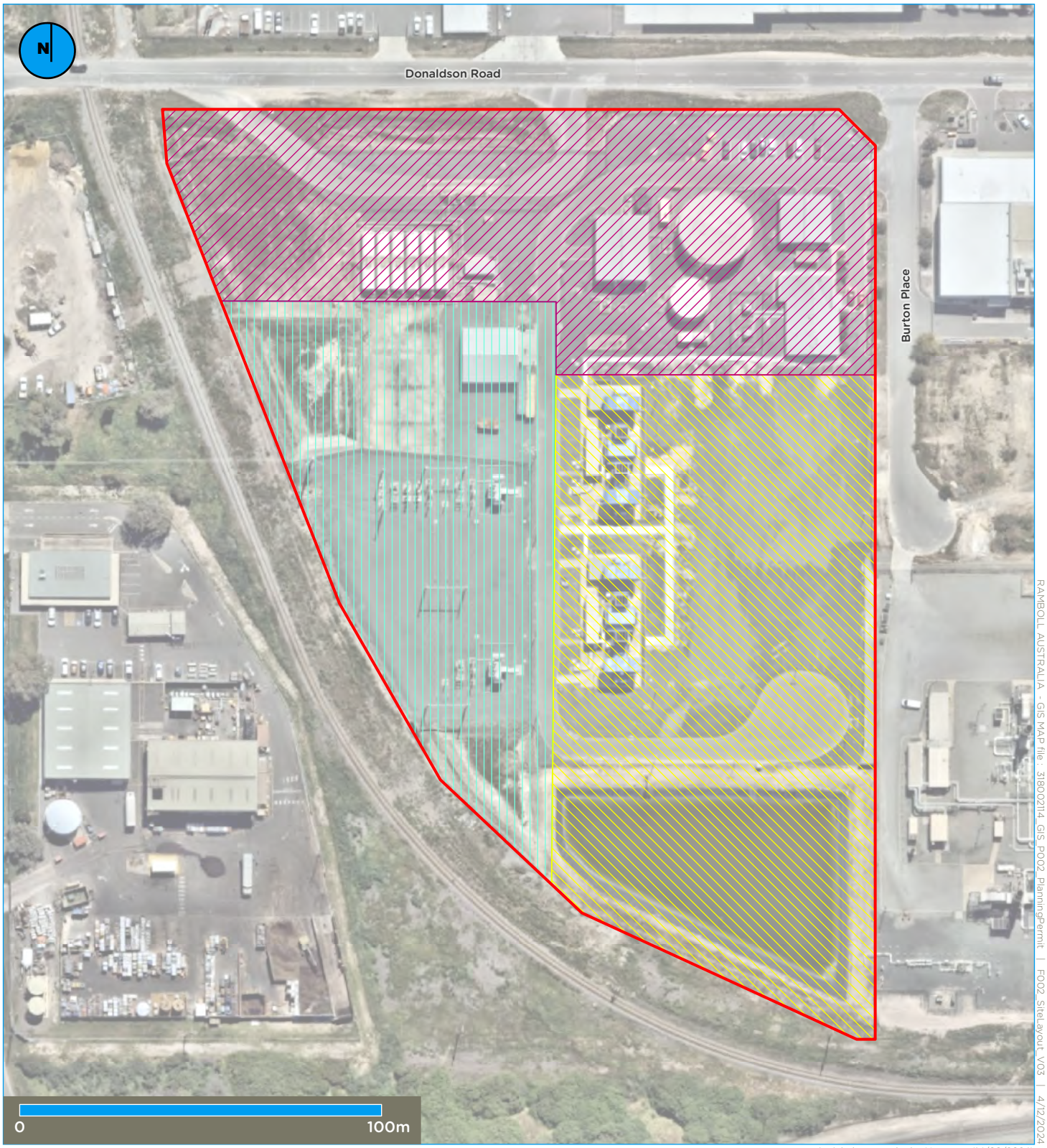
Site boundary

A4
1:90,000

Site Context

Kwinana Swift Power Station Expansion Approvals

Figure 1: Regional location



Aerial photography by Nearmap (14/09/2024)

Legend

- Total project development area
- Balance of plant
- Gas turbines and auxiliary equipment
- Substation

A4
1:1,500

RAMBOLL AUSTRALIA - GIS MAP file: 318002114_GIS_F002_PlanningPermit | F002_SiteLayout_V03 | 4/12/2024

Site Layout
Kwinana Swift Power Station Expansion Approvals

Figure 2: Proposal Development Envelope

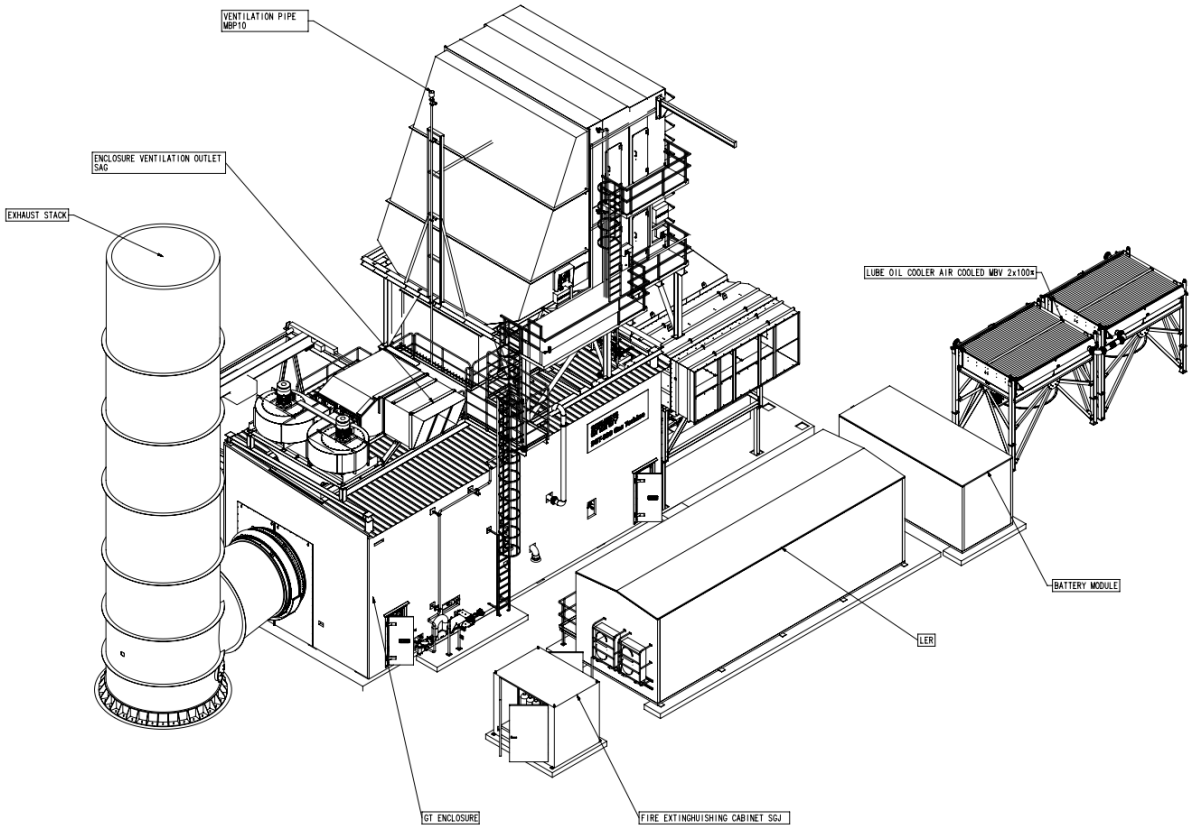


Figure 3: Indicative gas-turbine unit

1.2 PURPOSE OF THE GHGMP

Under section 15 of the *Environmental Protection Act 1986* (EP Act), the Environmental Protection Authority (EPA) has the objective to use its best endeavours to protect the environment and to prevent, control and abate pollution and environmental harm. One way in which the EPA discharges this objective is to consider proposals referred to it under Part IV of the EP Act. The reports that the EPA produces following formal assessments must set out what the EPA considers to be the key environmental factors identified in the course of the assessment, the EPA's recommendation as to whether the Proposal may be implemented, and (if the EPA recommends that implementation be allowed) the conditions and procedures that should apply to that implementation. The Minister for Environment (in consultation with other decision-making authorities) then decides whether or not the Proposal may be implemented.

The section 15 objective, combined with the established link between cumulative sources of GHG emissions and the risk of climate change, and the broad acknowledgement that the warming climate will impact the WA environment, means it is appropriate for the EPA to consider the effects of proposals that contribute to the state's GHG emissions. Outlined in the EPA's GHG Emissions Environmental Factor Guideline (GHG Guideline) (EPA, 2024), the EPA's objective for GHG emissions is to "minimise the risk of environmental harm associated with climate change by reducing GHG emissions as far as practicable".

The EPA considers that climate change should be limited to no more than 1.5 degrees Celsius (°C) above pre-industrial levels to minimise the risk of environmental harm to WA's environment. In

order to contribute to this goal, the EPA's view is that there should be deep, substantial and sustained reductions in WA's emissions this decade, and achievement of net zero emissions no later than 2050 through a straight-line trajectory (at a minimum) from 2030. The EPA emphasises reductions beyond these should also be made as far as practicable, and that WA emissions should reach net zero well before 2050.

The GHG Guideline requires proponents to provide sufficient information for the EPA to make an assessment as to whether the Proposal meets the EPA's objective. The purpose of this GHGMP is to provide the Proposal GHG emissions estimates and management, and monitoring measures to demonstrate that the Proposal can meet the EPA's objective. While not explicitly required by the EPA, this GHGMP has been developed to provide the information required for the EPA's assessment of GHG impacts and support approval under Part IV of EP Act. This approach is consistent with the EPA's GHG Guidelines which suggests proponents may still provide a GHGMP to support assessment. This GHGMP has been prepared in consideration of the GHG guidelines and associated GHGMP template. The scope of the GHGMP includes construction and operation of the Proposal.

2 GHG MANAGEMENT PLAN COMPONENTS

2.1 EMISSION ESTIMATES

Perth Energy has identified an opportunity to expand firming capacity based on the WA State Government's energy transition strategy which includes the retirement of government-owned coal-fired generators by 2030. The Proposal also aligns with the State Sectoral Emissions Reduction Strategy (SERS). An indicative demand profile for the Proposal provided by the Australian Energy Market Operator (AEMO) has been used to estimate the emissions profile for the Proposal. The indicative demand data was supplied for a period from 2029 until 2058 however the proposal is anticipated to be operational until (but not including) 2074 based on an operational life span of 45 years. Demand from year 2058 to 2074 has been extrapolated based on the provided data to provide estimated emissions for the life of the Proposal.

Perth Energy has estimated Scope 1, 2 and 3 GHG emissions (in tonnes (t) Carbon Dioxide Equivalent (CO_2-e) that can be expected from the Proposal, based on the information available in January 2025. The methodology used to develop the estimates is provided in Section 2.1.5. The emissions estimate includes GHG emissions during the operation phase of the Proposal. The operation phase is considered to be from 2029 onwards.

At this stage Perth Energy has not undertaken detailed design or engaged a third-party construction contractor for development of the Proposal, therefore the level of detail required to estimate GHG emissions during construction was not available. Construction activities are expected to be limited and include the assembly of infrastructure (turbines and generators) on cleared/prepared land and the movement of vehicles and equipment to site. Construction emissions are not expected to be material (i.e., well below the EPA's 100,000 t CO_2-e/a threshold), any estimates provided at this stage would be highly speculative. On this basis, construction GHG emissions estimates have not been calculated.

A summary of the Proposal Scope 1, 2 and 3 GHG emissions estimates for the operational phase is provided in Table 2. The Proposal emissions estimates and the background calculations used to assess the GHG emissions estimates are provided in more detail on the following sections. The major GHG emissions from the Proposal are carbon dioxide (CO_2), nitrous oxide (N_2O) and methane (CH_4).

Table 2: Emissions estimates for the Proposal

	Emissions (t CO_{2-e})			
	Construction	**Operation**	**Annual average**	**Peak Emissions (Year)**
Scope 1	Not available, refer to text above.	8,629,357	191,763	281,871 (2036)
Scope 2		23,850	530	530 (any year)
Scope 3		1,010,793	22,462	32,822 (2036)

2.1.1 Annual Emissions

Table 3 provides the Proposal annual and total GHG emissions estimates over the life of the Proposal. Annual Emissions over the life of the Proposal are shown in Figure 4.

Table 3: Annual emission estimates for the Proposal

Year	Stage	Annual Emissions (t CO_2-e/a)		
		Scope 1	Scope 2	Scope 3
2027	Construction	Not available, refer to text in Section 2.1		
2028				
2029	Operations	136,509	530	16,353
2030		188,622	530	22,323
2031		266,589	530	31,420
2032		214,928	530	25,361
2033		197,765	530	23,548
2034		194,215	530	22,928
2035		209,314	530	24,870
2036		281,871	530	32,822
2037		186,276	530	21,775
2038		197,085	530	23,084
2039		213,994	530	25,039
2040		261,880	530	30,215
2041		195,850	530	22,903
2042		187,637	530	22,062
2043		177,636	530	20,747
2044		254,299	530	29,354
2045		171,153	530	20,098
2046		162,058	530	19,157
2047		159,113	530	18,644
2048		176,985	530	20,574
2049		248,378	530	28,868
2050		171,761	530	20,259
2051		160,877	530	18,844
2052		158,463	530	18,471
2053		178,210	530	20,899
2054		248,986	530	29,029
2055		170,580	530	19,946
2056		160,227	530	18,671
2057		159,687	530	18,796
2058		178,817	530	21,060
2059		254,299	530	29,354

Year	Stage	Annual Emissions (t CO_2-e/a)		
		Scope 1	Scope 2	Scope 3
2060		171,153	530	20,098
2061		162,058	530	19,157
2062		159,113	530	18,644
2063		176,985	530	20,574
2064		248,378	530	28,868
2065		171,761	530	20,259
2066		160,877	530	18,844
2067		158,463	530	18,471
2068		178,210	530	20,899
2069		248,986	530	29,029
2070		170,580	530	19,946
2071		160,227	530	18,671
2072		159,687	530	18,796
2073		178,817	530	21,060

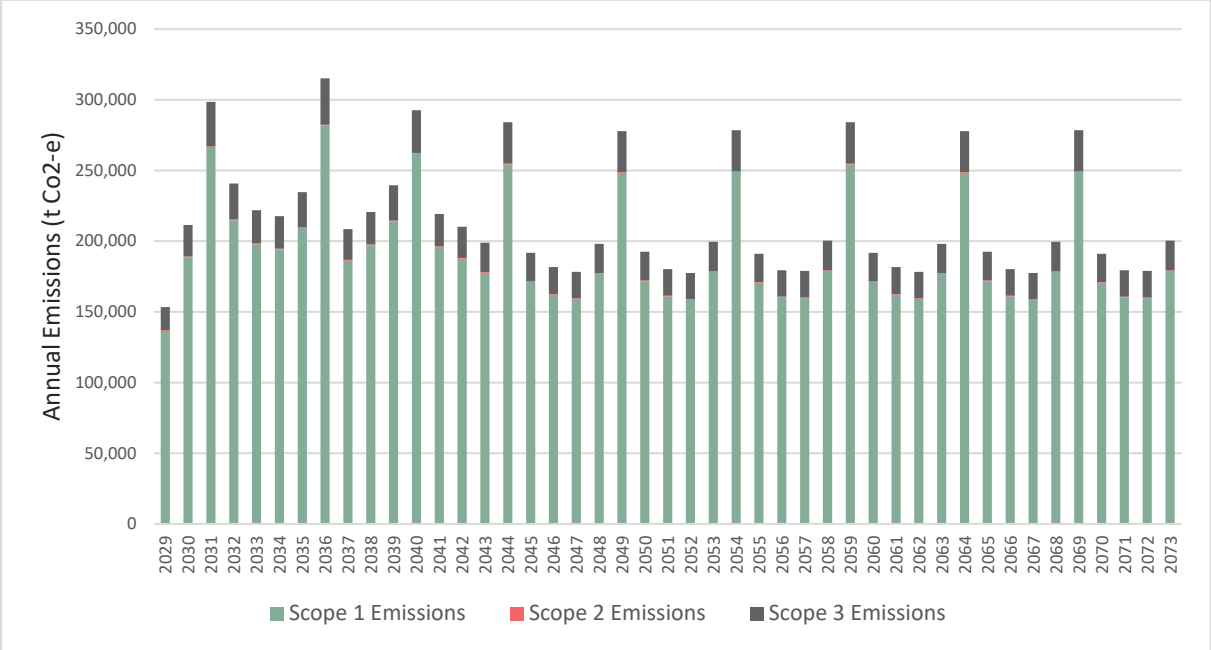


Figure 4: GHG emissions over the operational life of the Proposal

2.1.2 PROPOSED EMISSIONS BASELINE

The EPA's guidance for the GHG Emissions Environmental Factor and template for GHG MP's requires proponents to identify a baseline from which Proposal emissions are to decrease to net zero by 2050 (EPA, 2024). This baseline is identified by the proponent and is based on several factors including the operating mode of the Proposal, in this case peaking power supply. This baseline is not a Safeguard Mechanism baseline. The Proposal will not have a facility specific baseline under the Safeguard Mechanism, instead it is covered under the cumulative sectoral baseline as it supplies power to the SWIS. The baseline provided in this section is therefore not subject to production variable emissions intensities, the decline rate or any other settings that apply to Safeguard Mechanism baselines.

As outlined earlier, Perth Energy's Proposal supports the Western Australian Government's energy transition strategy and broader decarbonisation objectives, including alignment with the State SERS. The demand for peaking power will depend on evolving market conditions and the timing of retirements across SWIS-connected generation infrastructure. An indicative demand profile for the Proposal provided by AEMO has been used to estimate the emissions profile for the Proposal (Section 3.1.1).

The Proposal is designed to provide critical firming and system stability services to the SWIS. It is being developed in direct response to the State's energy transition strategy and the anticipated retirement of significant coal and gas-fired generation capacity by 2030.

The Proposal is designed to:

- Provide firming support during extended periods of low renewable output, especially after batteries are depleted;
- Deliver fast-response flexible capacity to address renewable intermittency (e.g., cloud cover, wind volatility); and
- Support the SWIS during "dunkelflaute" events (low wind, high cloud cover) or major unplanned outages of coal or gas generators.

To deliver on these requirements it is critical that the Proposal has the ability to react to demand, up to its nameplate design capacity. The baseline has been set at nameplate capacity adjusted to account for reasonably predicted shutdowns and scheduled maintenance. This scenario represents the highest power generation scenario of the Proposal and is necessary to afford flexibility in dispatch.

The maximum installed capacity is 250 MW. Operating 8,322 hours a year (accounting for maintenance and shutdowns) at 100% load the Proposal can produce up to 2,080,500 Megawatt hours (MWh). The Proposal will use up to four gas turbines, the number and configuration of which is yet to be determined. Turbine selection will be based on the best available technology suitable for the Proposal's context at the time of development. Perth Energy has considered the emissions intensities and heat rates of several gas turbines currently available to the market and has chosen to use an emissions intensity of 0.507 t CO_2-e / MWh which is representative of the turbines that are likely to be installed and operated. The resulting baseline is 1,054,814 t CO_2-e.

The actual demand for the Proposal will depend on the needs of grid-connected customers and the timing of retirements of less efficient generation technologies, such as coal-fired and older gas-fired units. Ultimately, peaking power demand will be determined by AEMO, requiring the

Proposal to maintain operational flexibility to meet varying demand levels and comply with any future baseline or emissions reduction targets.

As a participant in the Reserve Capacity Mechanism (RCM), the Proposal must be available when called upon by AEMO. It will only bid into the market at its short-run marginal cost (SRMC), ensuring dispatch occurs only when lower-cost sources, such as coal or renewables, are unavailable. This market structure inherently supports emissions reduction by limiting the Proposal's operation to periods when it displaces higher-emission or unavailable renewable generation.

The Proposal is designed to operate primarily at low generation levels, ramping up to full output during peak demand periods. While current forecasts anticipate moderate utilisation, demand could exceed expectations, potentially reaching the plant's nameplate capacity. Its core purpose is to provide flexible, responsive generation that supports increased reliance on renewable energy in the SWIS, thereby contributing to a reduction in overall emissions intensity.

Compared to existing technologies, the Proposal represents a lower emissions intensity generation option. Should the retirement of older technologies accelerate average demand for the Proposal may exceed current projections. To ensure it can support the decarbonisation of the SWIS without penalty, a baseline reflecting a reasonable maximum expected emissions trajectory has been adopted. Emissions estimates and the baseline are presented in Figure 5.

Perth Energy considers this approach appropriate in the context of the Proposal acting as a necessary interim solution that enables the transition to a lower-carbon SWIS. As the share of renewable generation and storage increases, reliance on the Proposal will decline, along with its associated greenhouse gas emissions. Perth Energy notes that this approach to setting baselines has been accepted for similar projects, specifically the Kemerton Power Station (EPA Report 1772, Ministerial Statement 1241) which has emissions limits commensurate with operations at installed capacity however regularly operates at a lower throughput to provide peaking power supply.

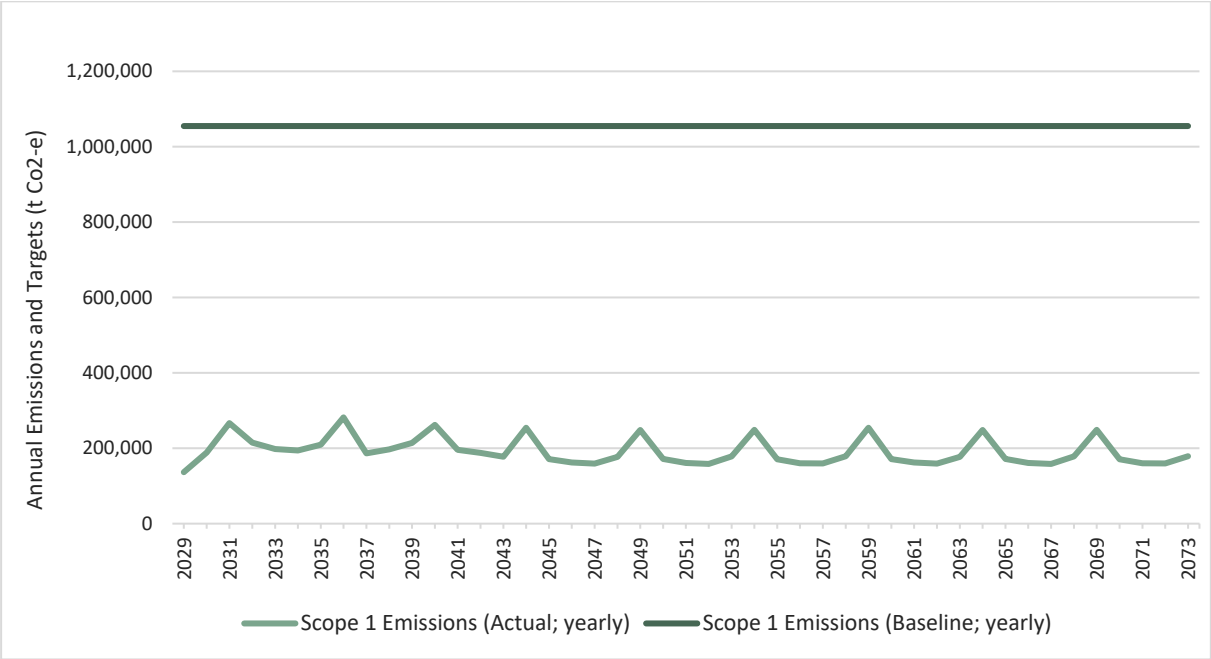


Figure 5: Baseline and predicted emissions estimates

2.1.3 Source of Emissions

A summary of the Proposal GHG emissions estimates inventory for the life of the Proposal is provided in Table 4.

Table 4: GHG Emissions estimates summary

Emissions	Average Emissions (t $CO_{2\text{-}e}$/a)	Total Emissions (t $CO_{2\text{-}e}$)
Construction		
Not available, refer to text in Section 2.1		
Operations		
Scope 1		
Process Emissions	191,763	8,629,357
Total Scope 1 Emissions	**191,763**	**8,629,357**
Scope 2		
Electricity from the grid whilst not operating	530	23,850
Total Scope 2 Emissions	**530**	**23,850**
Scope 3		
Natural Gas	13,878	624,512
Diesel	1,065	47,929
Transmission	7,519	338,352
Total Scope 3 Emissions	**22,462**	**1,010,793**

2.1.4 Greenhouse Gas and Global Warming Potential

The GHG Emissions Environmental Factor Guideline (EPA, 2024) relates to the seven categories of GHG covered by the United Nations Framework Convention on Climate Change Reporting Guidelines on Annual Inventories and Kyoto Protocol. These gases are CO_2, CH_4, N_2O, sulphur hexafluoride, hydro fluorocarbons, perfluorocarbons and nitrogen trifluoride.

The GHG considered in this assessment and the corresponding global warming potential (GWP) for each GHG are listed in Table 5. GWP is a metric used to quantify and communicate the relative contributions of different substances to climate change over a given time horizon (100 years). GWP accounts for the radiative efficiencies of various gases and their lifetimes in the atmosphere, allowing for the impacts of individual gases on global climate change to be compared relative to those for the reference gas CO_2. The GWPs from the Intergovernmental Panel on Climate Change Fifth Assessment report were used in this assessment (Table 5).

Table 5: 100 year global warming potential of GHGs

GHG	Global Warming Potential
CO_2	1
CH_4	28
N_2O	265

2.1.5 Emission Estimate Methodology

The GHG Protocol Corporate Accounting and Reporting Standard (GHG Protocol Corporate Standard; World Resources Institute (WRI) & World Business Council for Sustainable Development (WBCSD), 2004), was first published in September 2001 and is now adopted and accepted globally by businesses, non-governmental organisations (NGOs), and governments as the guidance standard for GHG accounting and reporting.

Businesses benefit from using a common standard for GHG inventory as it improves the consistency, transparency, and understandability of reported information, making it easier to track and compare progress over time.

The GHG Protocol Corporate Standard (WRI & WBCSD, 2004) was updated in 2015 with the Scope 2 Guidance. It provides requirements and guidance for companies and other organisations, such as NGOs, government agencies, and universities that are preparing a corporate-level GHG emissions inventory. The GHG Protocol Corporate Standard has been used as the basis for this assessment, for calculating and reporting the GHG emissions estimates, assuming the Proposal will be built and operated as designed.

GHG emissions are classified as Scope 1, Scope 2 and Scope 3. The following sections provide an overview of the classification.

Scope 1 Emissions

The GHG Protocol Corporate Standard (WRI & WBCSD, 2004) defines Scope 1 GHG emissions as the emissions from sources a company owns or controls. The emissions are generally direct GHG emissions and are principally the result of the following types of activities undertaken by the company:

- Stationary Combustion – On-site generation of electricity, heat, or steam. These emissions result from combustion of fuels in stationary sources, e.g. boilers, furnaces, turbines;
- Physical or Chemical Processing – Most of these emissions result from manufacture or processing of chemicals and materials, e.g. cement, aluminium, adipic acid, ammonia manufacture, and waste processing;
- Mobile Combustion – Transportation of materials, products, waste, and employees. These emissions result from the combustion of fuels in company owned/controlled mobile combustion sources (e.g. trucks, trains, ships, airplanes, buses, and cars); and
- Fugitive Emissions – These emissions result from intentional or unintentional releases, e.g. equipment leaks from joints, seals, packing, and gaskets; CH_4 emissions from coal mines and venting; Hydrofluorocarbon emissions during the use of refrigeration and air conditioning equipment; and CH_4 leakages from gas transport.

The Proposal is only expected to have material emissions from stationary combustion.

Scope 2 Emissions

The GHG Protocol Corporate Standard (WRI & WBCSD, 2004) defines Scope 2 GHG emissions as the emissions from the generation of purchased electricity that is consumed in its owned or controlled equipment or operations. Scope 2 emissions are a special category of indirect emissions. For many companies, purchased electricity represents one of the largest sources of GHG emissions and the most significant opportunity to reduce these emissions. Accounting for Scope 2 emissions allows companies to assess the risks and opportunities associated with changing electricity and GHG emissions costs.

Scope 3 Emissions

Scope 3 GHG emissions are the result of activities from assets not owned or controlled by the reporting company, but that the organisation indirectly affects in its value chain.

The Technical Guidance for Calculating Scope 3 Emissions (WRI & WBCSD, 2013) categorises the Scope 3 emissions into 15 distinct categories. Section 2.2.2 summarises the Scope 3 emissions from the indirect upstream and down-stream activities and outlines a brief description of each category.

2.1.6 Calculation Methodology

GHG emissions are calculated based on the following:

$$Activity\ Data\ \times Emission\ Factor\ = GHG\ Emissions$$

Where:

- Activity data is quantity or usage data in t/a, Gigajoule (GJ)/a, etc. It can be measured (e.g. from data received from a plant in operation) or calculated (e.g. from a mass balance model or stoichiometric chemical balance) or estimated (e.g. from published specifications on a vehicle type);
- Emission Factor is a factor or ratio that has been calculated by relating GHG emissions to a measure of activity at an emissions source. Emissions factors can be determined by experimental measurement, or published, generic emissions factors can be used from

reputable organisations globally or locally. Published emissions factors can vary slightly; and

- GHG Emissions are the mass of carbon dioxide and / or all equivalent GHG over a period of time, in units such as t $CO_{2\text{-}e}$/a.

Emission Factors

Vendor data has been used to calculate Scope 1 emissions from the Proposal. The type of gas-fired generators has not yet been identified however, Perth Energy has considered the emissions intensities and heat rates of several gas turbines currently available to the market and has chosen to use the emissions intensity of 0.507 t CO_2-e / MWh. The 0.507 t CO_2-e / MWh is representative of the turbines that are likely to be installed and operated.

The National Greenhouse and Energy Reporting (NGER) emissions factors for the supply of natural gas and diesel, and the transmissions of electricity via the SWIS have been used to calculate Scope 3 emissions. The emissions factors used are summarised in Table 6.

Table 6: NGER emissions factors used to calculate Scope 3 emissions

Emissions Source	Emissions Factor
Natural Gas	4.1 (kg/GJ)
Diesel	17.3 (kg/GJ)
Transmission of Electricity	0.02 (kg/kWh)

Limitations

While every attempt has been made to ensure accuracy in calculations performed in this report, the following sources of uncertainty have been identified:

- Modelling work performed as part of preparing this publication inherently requires assumptions about future behaviours and market interactions, which may result in forecasts that deviate from future conditions;
- Emissions factors have been selected based on current vendor options which may be subject to change as procurement develops resulting in higher or lower estimated emissions; and
- Emissions estimates have considered site climatic conditions, however these are expected to fluctuate and may impact the efficiency of the generators.

Assumptions

The following key assumptions have been applied to the calculation and modelling of GHG emissions for the Proposal.

General Assumptions

- The Proposal will operate below the maximum operating scenario; and
- The Proposal demand will be subject to grid requirements and will fluctuate over the life of the Proposal.

Scope 1

- No vegetation clearing is required;
- Aero-derivative or light industrial dual-fuel turbine units will be used;
- Turbines are installed and operated in an open cycle configuration;

- Projected power generation and emissions estimates consider site specific operating conditions, including:
    - Evaporative cooling;
    - Wet compression and fogging;
    - NO_x control and injection;
    - An average temperature of 41°C and relative humidity of 15%; and
    - Operations are at sea level.

Scope 2

- It is assumed that the Proposal will purchase 1 MWh of electricity per annum to maintain connection during maintenance and shutdowns. No other Scope 2 emissions will be generated during the operating phase.

Scope 3

- Natural gas and diesel will be sourced from a provider that complies with the required standards;
- NGER emissions factors are suitable for the calculation of scope 3 emissions from the supply of natural gas, diesel and the transmission of electrical energy via the SWIS; and
- Supply of natural gas and diesel will be direct to the Proposal site.

Exclusions

The following sources of emissions are excluded from the Proposal emissions estimate:

- Other projects that Perth Energy has planned or proposed are not considered;
- Perth Energy planned or proposed future development of the Proposal, including future stages;
- Perth Energy's other facilities outside of the Proposal (e.g. offices in Perth, etc.) are not included in this assessment;
- Specific Scope 3 emissions including:
    - Business Travel;
    - Franchises and investments; and
- Fugitive emissions – e.g. equipment leaks from joints, seals, packing, and gaskets; hydrofluorocarbon emissions during the use of refrigeration and air conditioning equipment; and CH_4 leakages from gas transport have also been excluded.

2.2 EMISSIONS TRAJECTORY AND TARGETS

Emissions reduction targets for Scope 1 and Scope 2 emissions have been developed for the Proposal to meet the EPA and WA Government's target of net-zero GHG emissions by 2050. The EPA (2024) expects proposals to demonstrate deep, substantial and sustained emissions reduction this decade and achievement of net zero emissions no later than 2050 along a linear trajectory (at a minimum) from 2030. The targets and emissions reduction trajectory are shown in Section 2.2.1.

Perth Energy is committed to reducing its operational GHG emissions for the Proposal through reasonable and practicable management measures and applying an adaptive management framework to respond to current uncertainties and future developments in government policies, markets and technology.

2.2.1 Scope 1 Emissions Trajectory and Targets

GHG emissions targets have been set based on the EPA's minimum expectation:

> *"achievement of net zero emissions no later than 2050 through a straight-line trajectory (at a minimum) from 2030"* (EPA, 2024).

Based on this expectation, during the period between commencement of operations and 2030 the target is the baseline value (1,054,814 t CO_2-e), after 2030, the target begins to decline linearly to net zero by 2050 (Figure 6).

Figure 7 presents the 5-yearly cumulative Scope 1 emissions estimates and targets. A summary of Scope 1 emissions estimates and targets, annually and cumulatively over 5-year intervals are provided in Table 7.

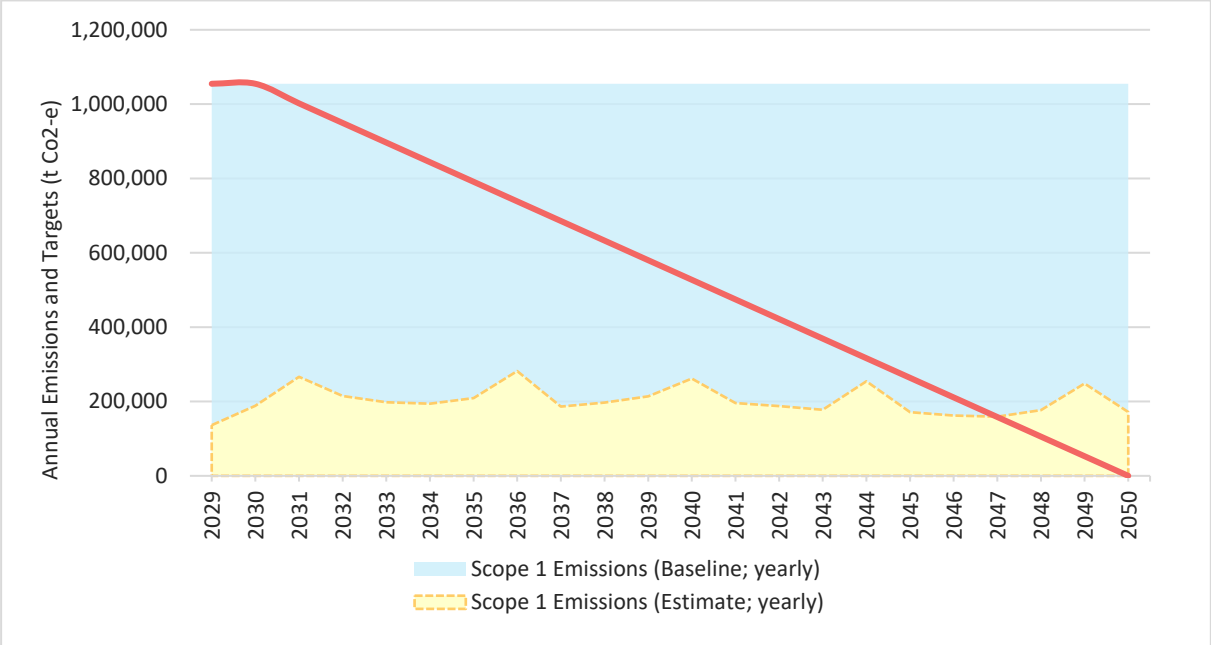
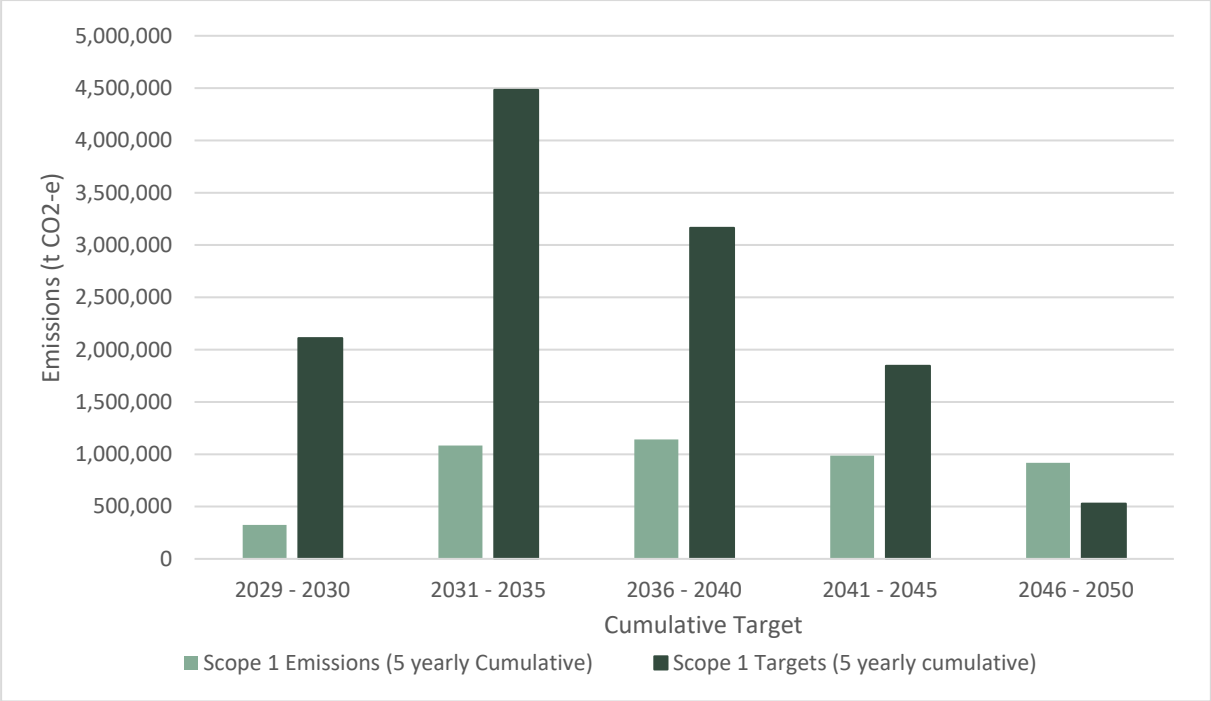


Figure 6: Emissions trajectory and target to 2050 (net zero afterwards)



Note: the 2029 -2030 cumulative target is based on a 2 year period, all other cumulative targets are based on a 5 year period.

Figure 7: 5 yearly predicted cumulative emissions and targets to 2050 (net zero afterwards)

Assuming the targets commence from the 2030 baseline (based on maximum throughput), the predicted actual emissions are likely to comply with the emissions reduction targets until 2047. After this time the predicted actual emissions are likely to exceed the targets.

Table 7: Annual and total operational Scope 1 emissions with 5 yearly cumulative totals to 2050 (net zero afterwards)

Year	Actual Scope 1 Emissions (t CO_{2-e})	Target Scope 1 Emissions (t CO_{2-e})	Cumulative 5 yearly Scope 1 Emissions (t CO_{2-e})	Target Cumulative Scope 1 Emissions (t CO_{2-e})
2029	136,509	1,054,814	325,130	2,109,628
2030	188,622	1,054,814		
2031	266,589	1,002,073	1,082,811	4,482,960
2032	214,928	949,333		
2033	197,765	896,592		
2034	194,215	843,851		
2035	209,314	791,111		
2036	281,871	738,370	1,141,105	3,164,442
2037	186,276	685,629		
2038	197,085	632,888		
2039	213,994	580,148		
2040	261,880	527,407		
2041	195,850	474,666	986,576	1,845,925
2042	187,637	421,926		
2043	177,636	369,185		

Year	Actual Scope 1 Emissions (t CO_{2-e})	Target Scope 1 Emissions (t CO_{2-e})	Cumulative 5 yearly Scope 1 Emissions (t CO_{2-e})	Target Cumulative Scope 1 Emissions (t CO_{2-e})
2044	254,299	316,444		
2045	171,153	263,704		
2046	162,058	210,963	918,296	527,407
2047	159,113	158,222		
2048	176,985	105,481		
2049	248,378	52,741		
2050	171,761	0		

2.2.2 Scope 3 Emissions Trajectory

Table 8 summarises the Scope 3 emissions from the indirect upstream and down-stream activities and outlines a brief description of each category.

Table 8: Scope 3 emission categories

No.	GHG Protocol Category	Description	Relevance to Proposal
1.	Purchased Goods and Services	Extraction, production, and transportation of goods and services purchased or acquired by the reporting company in the reporting year, not otherwise included in Categories 2-8.	Not relevant, purchased goods and services are included in Category 3.
2.	Capital Goods	Extraction, production, and transportation of capital goods purchased or acquired by the reporting company in the reporting year.	Not relevant.
3.	Fuel and energy-related activities not included in Scope 1 or Scope 2	Extraction, production, and transportation of fuels and energy purchased or acquired by the reporting company in the reporting year, not already accounted for in Scope 1 or Scope 2, including: a) Upstream emissions of purchased fuels (extraction, production, and transportation of fuels consumed by the reporting company); b) Upstream emissions of purchased electricity (extraction, production, and transportation of fuels consumed in the generation of electricity, steam, heating, and cooling consumed by the reporting company); and c) Transmission and distribution losses (generation of electricity, steam, heating and cooling that is consumed (i.e. lost) in a transmission and distribution system) – reported by end user Generation of purchased electricity that is sold to end users (generation of electricity, steam, heating, and cooling that is purchased by the reporting company and sold to end users) – reported by utility company or energy retailer only.	Relevant – natural gas and diesel supply. Emissions associated with extracting, processing and transporting natural gas.
4.	Upstream transportation and distribution	• Transportation and distribution of products purchased by the reporting company in the reporting year between a company's tier 1 suppliers and its own operations (in vehicles and facilities not owned or controlled by the reporting company); and • Transportation and distribution services purchased by the reporting company in the reporting year, including inbound logistics, outbound logistics (e.g. of sold products), and transportation and distribution between a company's own facilities (in vehicles and facilities not	Not relevant as no transportation for products or services by vehicles is required.

No.	GHG Protocol Category	Description	Relevance to Proposal
		owned or controlled by the reporting company).	
5.	Waste generated in operations	Disposal and treatment of waste generated in the reporting company's operations in the reporting year (in facilities not owned or controlled by the reporting company).	Not relevant as electricity production does not generate material waste volumes.
6.	Business Travel	Transportation of employees for business-related activities during the reporting year (in vehicles not owned or operated by the reporting company).	Not relevant
7.	Employee Commuting	Transportation of employees between their homes and their worksites during the reporting year (in vehicles not owned or operated by the reporting company).	Not relevant, the Proposal is an expansion of the existing power station. Minimal additional workforce required to support the Proposal. Emissions are expected to be immaterial.
8.	Upstream Leased Assets	Operation of assets leased by the reporting company (lessee) in the reporting year and not included in Scope 1 and Scope 2 – reported by lessee.	Not relevant to the scope of the Proposal.
9.	Downstream Transportation and Distribution	Transportation and distribution of products sold by the reporting company in the reporting year between the reporting company's operations and the end consumer (if not paid for by the reporting company), including retail and storage (in vehicles and facilities not owned or controlled by the reporting company).	Included as energy supply.
10.	Processing of Sold Products	Processing of intermediate products sold in the reporting year by downstream companies (e.g. manufacturers).	Not relevant as not intermediate products will be produced.
11.	Use of Sold Products	End use of goods and services sold by the reporting company in the reporting year.	Not relevant as electricity is the final product.
12.	End-of-life Treatment of Sold Products	Waste disposal and treatment of products sold by the reporting company (in the reporting year) at the end of their life.	Not relevant as electricity is the final product.
13.	Downstream Leased Assets	Operation of assets owned by the reporting company (lessor) and leased to other entities in the reporting year, not included in Scope 1 and Scope 2 – reported by lessor.	Not relevant as it is included under Scope 1.
14.	Franchises	Operation of franchises in the reporting year, not included in Scope 1 and Scope 2 – reported by franchisor.	Not relevant as no franchises included.
15.	Investments	Operation of investments (including equity and debt investments and project finance) in the reporting year, not included in Scope 1 or Scope 2.	Not relevant as no investments included.

Scope 3 emissions estimates were calculated using the emissions factors and methodology described in the Australian National Greenhouse Accounts Factors: 2023 (DCCEEW, 2024) and are aligned with the GHG Protocol (GHG Protocol, 2011). The emissions factors used are detailed within Table 9.

Table 9: Scope 3 emission estimates

Source	Activity	Category	NGER emissions factor	Average Emissions (t CO_{2-e})	Lifetime Emissions (t CO_{2-e})
Natural gas	Energy Generation	Purchased goods and services	4.1 kg CO_2-e/GJ	13,878	624,512
Diesel	Energy Generation	Purchased goods and services	17.3 kg CO_2-e/GJ	1,065	47,929
Transmission and distribution	Energy supply	Downstream Transportation and Distribution	0.02 kg CO_2-e/kWh	7,519	338,352
				Total	**1,010,793**

A Scope 3 GHG emissions trajectory for the Proposal to 2074 is shown in Figure 8.

A conservative approach to Scope 3 emissions has been taken to present the 'worst-case' scenario (e.g. no decarbonisation). It is assumed that due to the wide-spread de-carbonisation efforts, Scope 3 emissions will slowly decline, however, these emissions will be challenging to avoid or reduce due to the limited influence Perth Energy has over the way the product is processed by external companies.

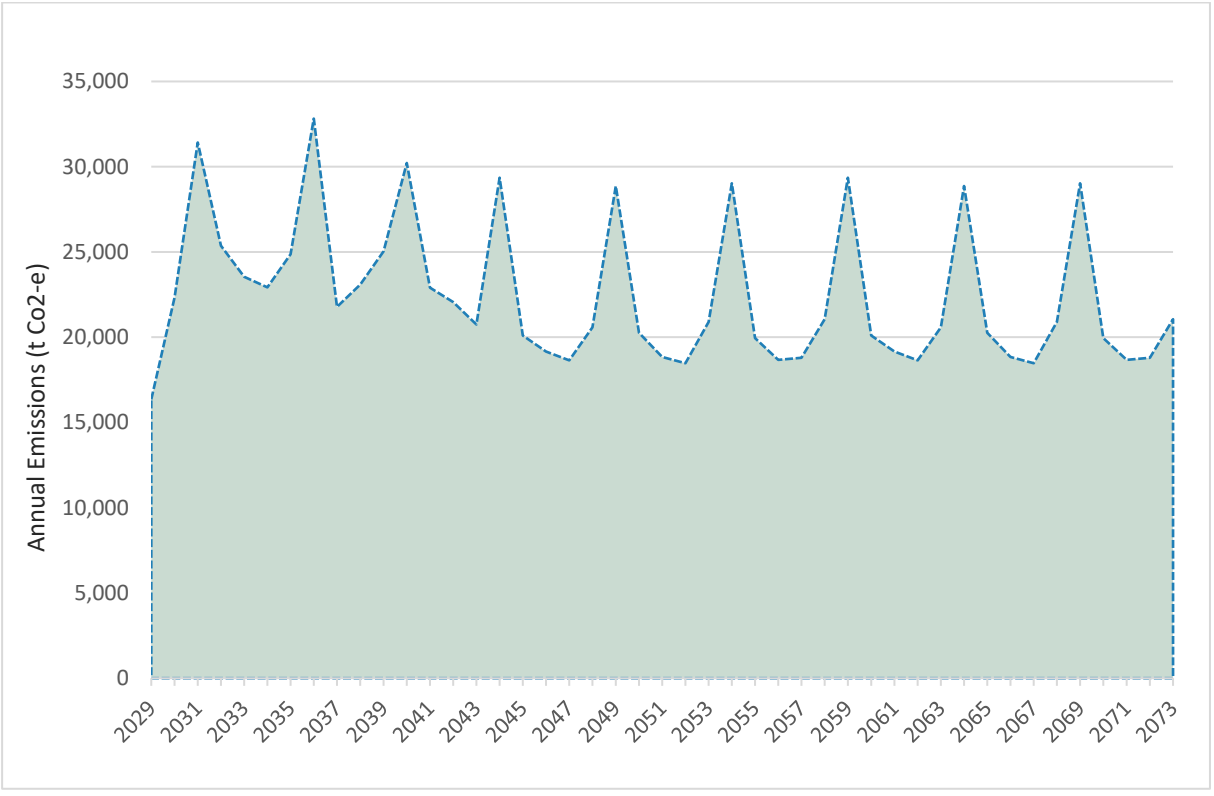


Figure 8: Scope 3 emissions trajectory

2.3 SCOPE 1 MITIGATION MEASURES

Opportunities for direct GHG mitigation within the Proposal are limited, as its operational profile, providing peaking power, will determine its utilisation. However, the Proposal will be indirectly

influenced by broader GHG mitigation efforts across the SWIS. As a participant in the RCM, the Proposal must remain available for dispatch when called upon by AEMO. It can only bid into the market at its SRMC, ensuring it operates only when lower-cost sources—such as coal (while still operational) or renewables—are unavailable.

This market structure inherently supports emissions reduction, as the Proposal will only displace higher-emission generation when necessary and will never outcompete renewable energy on cost. Dispatch decisions will be entirely governed by AEMO; Perth Energy will not determine when the Proposal increases or decreases output.

The following sections detail the mitigation measures that will be implemented over the life of the Proposal to avoid, reduce or offset Scope 1 emissions.

2.3.1 Best-Practice Design

Perth Energy has investigated several gas turbine generator technology options to identify the best practice technology suitable for the Proposal. Parameters that were considered include:

- High energy density per square metre MW/m^2;
- Low nitrogen oxide (NOx) emissions;
- High efficiency;
- Flexible and reliable operation;
- Fast-start;
- Very-low minimal-generation;
- Factors contributing to system stability;
- Dual fuel (natural gas and diesel);
- Low cost generation ($/MW);
- Maintenance and operational requirements;
- High availability;
- Firm generation (when renewables not generating);
- Proven technology in WA (for construction, operation and maintainability);
- Ability to operate on hydrogen in the future; and
- Ability to operate on bio-diesel fuel in the future.

Additionally, the Proposal commits to consider the following parameters over the life of the Proposal:

- Use of new high-efficiency aero-derivative or light industrial gas turbine technology;
- Selected world-leading original equipment manufacturer (OEM) for gas turbine supply and commissioning;
- Through-life emissions/efficiency part of technology selection process; and
- Performance Guarantees in construction and operation.

Perth Energy is determined to utilise the best-practice technology that is suitable for the Proposal application. The choice of technology is limited by site-specific factors including climate, availability, packaging and compliance with other environmental constraints such as air quality. The chosen technology may therefore not represent best-practice in a global context of power generation; however, the Proposal will use the latest models of the chosen technology where possible which is expected to be competitive with other power generation technology and is considered best-practice in the context of the Proposal.

Although gas-fired power generation in combined cycle configuration (CCGT) is the most efficient from an emissions intensity perspective, it is not necessarily considered best practice design for this application. The primary objective of the Proposal is to provide intermittent firming power to support the increased penetration of renewable generation in WA. In this context, the Proposal must be able to be deployed rapidly and provide reliable, flexible power supply to the SWIS. Gas turbines in an open-cycle (OCGT) configuration are better suited to this purpose as they have a quicker start-up procedure and are able to ramp their power output up and down. OCGT are less complex meaning a smaller footprint, greater reliability and reduced maintenance. Furthermore, the OCGTs can be deployed rapidly, which is particularly urgent due to the announced retirement of the majority of baseload coal-fired power stations in the State by 2030.

Additionally, the transition from dominant coal generation to renewables is initially constrained by the transmission network. Utilising gas turbines in open cycle configuration maximises the installed capacity on the existing site, and has the advantage of utilisation of existing network capacity while avoiding any additional land disturbances for the power station or new transmission lines. This approach also aligns with the State's coal retirement trajectory, including the scheduled closure of the Collie Power Station in 2027.

2.3.2 Site Selection

Perth Energy has decided to co-locate the Proposal with the existing power station. This approach has several emissions avoidance benefits including:

- Avoiding the need to clear native vegetation;
- Maximising the use of limited existing network transmission capacity;
- Efficiencies in commuting and supply of equipment for maintenance that is required for both plants; and
- Avoiding the need to develop and clear vegetation for additional supply and transmission infrastructure.

2.3.3 Low Carbon Fuel Alternatives

Perth Energy has determined, based on a combination of site and intended use as firming support for its renewables portfolio, that the ideal technology type for the Proposal would be additional aeroderivative multi fuel turbines in an open cycle configuration. At the time of this submission, Perth Energy is in the process of tendering for the supply of these turbines and has not yet identified the specific turbines to be installed at the Proposal. A decarbonisation opportunity exists to utilise low carbon fuel such as biodiesel or hydrogen in place of natural gas. However, a reliable cost competitive source of either has not yet been identified. Even though there are several proposed production facilities for such fuels in the Kwinana area.

Despite the above, the ability to utilise biodiesel and or hydrogen for power generation is a key consideration in the selection of turbine technology. Perth Energy will continue to explore the opportunity to use low carbon fuel sources over the life of the Proposal.

2.3.4 Review Process

Perth Energy has investigated available alternative energy generation sources and assessed their applicability to this Proposal using criteria such as decarbonisation potential, site infrastructure,

power demand, reliability and maintenance requirements. At this time, the use of natural gas fuelled power generation is determined to be the most appropriate technology for the Proposal.

Perth Energy is committed to investigating the implementation of alternative technologies and strategies to lower the emissions intensity of the Proposal, such as the use of hydrogen or biofuels. As technologies and developments continue to grow and new GHG abatement technologies become available, Perth Energy will investigate their potential to be integrated into the Proposal.

2.4 Scope 2 Mitigation Measures

The Proposal will generate minor Scope 2 emissions during operations.

A minor amount (estimated to be up to 1 MWh/a) of electricity will be purchased form the SWIS to maintain connection to the grid while the plant is not operating during maintenance and shutdowns. The electricity purchased will cover the Proposal auxiliary loads such as lighting, air-conditioning, pumps, compressors, fans, among others whilst the power station is not operating.

Perth Energy will investigate electricity supply options and factor in the carbon footprint of supply. Preference will be given to those suppliers with a lower carbon intensity product and clear commitments and pathways to decarbonisation.

2.5 Scope 3 Mitigation Measures

Scope 3 emissions for the Proposal include those associated with the purchased goods and services (natural gas and diesel), and downstream distribution of electricity. Perth Energy has limited control over the emissions associated with these sources however it is, is committed to exploring opportunities for decarbonisation. Perth Energy will consider options to reduce the quantity and Scope 3 emissions relating to the delivery of natural gas and diesel by using:

- New high-efficiency aero-derivative or light industrial gas turbine technology;
- Selected world-leading OEM for gas turbine supply and commissioning;
- Through-life emissions/efficiency part of technology selection process; and
- Performance Guarantees in construction and operation.

Perth Energy will also investigate third party supply options for gas and diesel supply and factor in the carbon footprint of supply. Preference will be given to those suppliers with a lower carbon intensity product and clear commitments and pathways to decarbonisation.

2.6 Other Statutory Decision-Making Processes which Require Reduction in GHG Emissions

2.6.1 Western Australia State Greenhouse Gas Policy

In October 2024, the WA State Government released an updated GHG emissions policy to help guide Government decision making for major projects that are assessed by the EPA. The updated policy considered the Commonwealth Government reforms to the Safeguard Mechanism released in March 2023. The policy change is focused on removing duplication of GHG emissions regulation at a state and federal level stating:

"Where the greenhouse gas emissions of a major proposal assessed under Part IV of the Environmental Protection Act 1986 (WA) will be subjected to alternative regulatory measures, the State will no longer apply conditions to reduce net greenhouse gas emissions".

The pathway to net zero emissions will be regulated in Australia under the Safeguard Mechanism. The Safeguard Mechanism is designed to encourage/force emitters to a net-zero situation by 2050.

The Safeguard Mechanism applies a sectoral baseline to grid-connected electricity generators. As a result, a facility-specific Safeguard Mechanism Baseline will not apply to the Proposal and has therefore not been modelled or addressed in this GHGMP.

The GHG Guideline (EPA, 2024) was revised in November 2024, which includes a summary of the information required by the EPA to undertake environmental impact assessment related to this GHGMP. It provides that for grid connected facilities additional information is usually required to support the EPA's assessment and generally relates to benchmarking and best practice. This GHGMP has been prepared in consideration of the latest GHG Guideline (EPA, 2024).

2.6.2 Renewable Energy Target

The Renewable Energy Target (RET) is an Australian Government scheme that aims to reduce GHG emissions in the electricity sector and increase renewable electricity generation. The RET sets a target to deliver an extra 33,000 gigawatt-hours of electricity from renewable sources every year from 2020 to 2030. The RET differs to the proposed EPA reduction trajectory due to it being an incentive to add renewable electricity generation (currently legislated to 2030) rather than reduce emissions. However, the intent is by increasing renewables, electricity generated from fossil fuels should reduce along with emissions.

The Proposal will provide services to the SWIS, including provision of security and reliability on the SWIS transition process of decarbonisation. In a long term, the Proposal emissions will reduce when less electricity is required by the SWIS as other electricity providers connect to the grid.

2.7 Consistency with other GHG Reduction Instruments

2.7.1 Corporate Emission Reduction Targets

AGL has been supplying energy in Australia for over 185 years and was Australia's first gas company. As a major investor in renewable energy, AGL is committed to playing a role in the transition to a low carbon economy.

AGL is committed to taking a leading role in Australia's transition to a low carbon economy. AGL has created a Climate Transition Action Plan (AGL, 2022):

- The closure of Loy Tang A Power Station by the end of 2035. This closure is up to a decade earlier than previously announced and would prevent 200 Mt CO_2-e of GHG being emitted;
- Reduce their annual GHG emissions by at least 52% by 2035 following the closure of the Bayswater Power Station by 2033;
- Aim to be Net Zero for operated Scope 1 and 2 GHG emissions following the closure of all AGL's coal-fired power stations; and

- Develop a decarbonisation pathway to become Net Zero for Scope 3 emissions by 2050.

2.7.2 Sectoral Emissions Reduction Strategies

The State Government released the SERS for WA in December 2023 (DWER, 2023) which outlines the key priorities, benchmarks and milestones for WA's transition to net zero emissions while supporting the decarbonisation of our region. By 2050, 96% of energy consumed is projected to come from renewable generation, compared with 34% currently in the SWIS.

The SERS notes that under the pathway for industry, significant reduction of industry emissions can be achieved through low-emission electricity generation. This transition to renewable generation will include the need for additional back-up supply from plants such as this Proposal. This will ensure the SWIS receives reliable power supply and the reliance on coal and diesel power will be reduced. The Proposal is centred around providing the aforementioned stepping stone to emissions reduction until renewables have been fully integrated and therefore aligns with the SERS.

2.8 Benchmarking Review

Perth Energy has benchmarked the estimated emissions from the operations phase of the Proposal against other Australian gas-fired electricity generators. Reporting data sourced from NGERs has been used to compare Scope 1 emissions per unit of energy generation. Data used in benchmarking includes OCGT, CCGT and reciprocating engine power generation facilities. Facilities use a combination of fuel sources including natural gas, LNG, diesel and in some cases are blended. Benchmarking data is presented in Appendix 1. It was determined that the most relevant metric for comparison of GHG emission performance is GHG emissions per megawatt hour (t CO_2-e / MWh).

Benchmarking comparisons presented in Appendix 1 are not necessarily comparing like-for-like, due to the assumptions and projections applied to the emissions estimates for the Proposal. Emissions for other projects assessed in the benchmarking exercise are reported 'actual' emissions under the NGERs. The accuracy and reliability of the benchmarking data is based upon the transparency and consistency of reporting among the suppliers included in the analysis. Discrepancies in methodologies, data availability, and reporting practices may impact the comparability of emission intensity metrics. Furthermore, this benchmarking analysis may not encompass the entirety of the environmental impacts linked to electricity generation, such as water consumption, land use change, and waste management.

Despite the limitations discussed above, benchmarking shows the Proposal compares favourably against other gas-powered power stations and would place within the best 25% of gas-powered electricity stations in Australia (Figure 9). The emissions intensity of the Proposal is the lowest of all OCGT facilities and also compares favourably to many of the CCGT facilities.

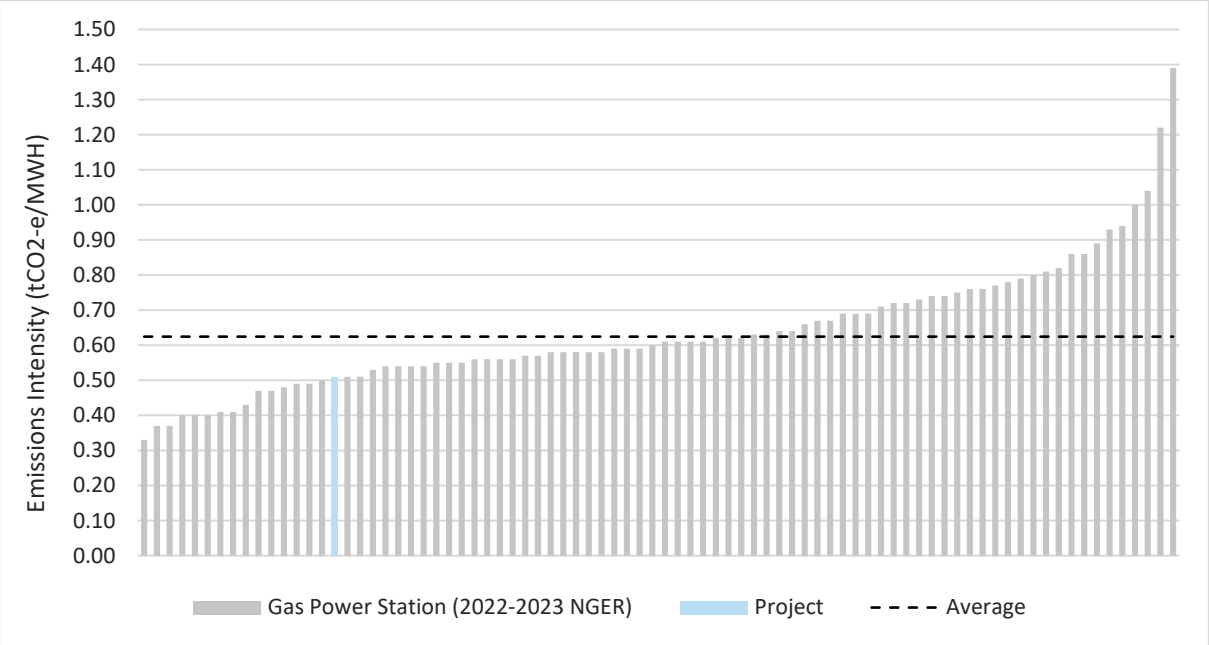


Figure 9: GHG emissions benchmarking

2.9 OFFSETS

Perth Energy has committed to reach net zero emissions by 2050 for this Proposal, with the intent of only using offsets (i.e., carbon credits) as a temporary solution while the technology or innovation required to completely decarbonise is developed.

Based on the targets and emissions estimates presented in Section 2.2.1, the Proposal will need to offset emissions in 2048 and the years beyond. A total of 439,794 t CO_2-e emissions will need to be offset to 2050 and then an average of 191,763 t CO_2-e / a will need to be offset thereafter (based on current projections).

Perth Energy will offset GHG emissions above the target with tangible offsets. Potential tangible offset options include but are not limited to undertaking additional re-vegetation activities on land held by Perth Energy to generate carbon credits, investing in carbon offset projects and purchasing, and surrendering carbon credits that meet the Australian Government's Climate Active Carbon Neutral Standard's offsets integrity principles (Commonwealth of Australia, 2020).

Preference will be given to ACCUs and other Nature-Based Solutions carbon credits that aim to protect and enhance natural ecosystems, benefit local communities and improve biodiversity. The exact proportion of ACCUs and other Nature-Based Solution carbon credits within the overall offsets portfolio will be determined each period based on forecast residual emissions and monitoring of offset markets. Offsets will be certified, accredited and registered under Standards within the International Carbon Reduction and Offsetting Accreditation (ICROA) Code of Best Practice (ICROA, 2024) and will meet the offset integrity standards required by the EPA. Offsets may be comprised of:

- Australian Carbon Credit Units (ACCUs) issued under the Carbon Credits (Carbon Farming Initiative) Act 2011 (Cth);
- Verified Emission Reductions issued under the Gold Standard program;
- Verified Carbon Units issued under the Verified Carbon Standard program; or

- Other offset units that meet integrity principles and are based on clear, enforceable and accountable methods.

Perth Energy has reviewed the Clean Energy Regulators Quarterly Carbon Market Report (March 2025) to understand the significance of the required offsets in the context of national carbon markets. The report estimates that the total number of ACCU's to be issued in 2025 will be 19 – 24 million.

Based on the projected dispatch demand, the Proposal's estimated average annual carbon liability of up to 191,763 t CO_2-e from 2047 represents a small percentage (1%) of total credits expected to be issued in 2025. This excludes nature-based solutions and other carbon credits that may be available in other national and international markets. Accordingly, Perth Energy considers it reasonable to expect that the necessary offsets for the Proposal will be available when required.

2.10 PROJECTS OPERATING BEYOND 2050

The EPA's view is that there should be a deep, substantial and sustained reduction in WA's emissions this decade, and achievement of net zero emissions no later than 2050 through a straight-line trajectory (at a minimum) from 2030. The EPA emphasises reductions beyond these should also be made as far as practicable, and that WA emissions should reach net zero well before 2050.

Given that the expected life of the Proposal is likely to exceed 2050, the Proposal will need to reach net zero emissions during its operating life. Perth Energy's objective for the Proposal is to reach net zero GHG emissions by 2050, and therefore the Proposal's expected operations beyond 2050 and subsequent decommissioning and rehabilitation of the site will be net zero. At this stage, net zero after 2050 will be achieved using offsets however as technology and the availability of alternative fuels progresses, Perth Energy may be able to meet these targets without reliance on offsets.

3 ADAPTIVE MANAGEMENT, CONTINUOUS IMPROVEMENT AND REVIEW OF THE GHGMP

3.1 MONITORING AND CONTINUOUS IMPROVEMENT

GHG emissions and the production energy arising from the operation of the Proposal will be monitored to enable estimation of GHG emissions and reporting as per the NGER requirements. In addition to the measurement and collection of NGER data, Perth Energy will adhere to the record keeping requirements of the NGER Scheme.

The following data would require annual monitoring, in order to estimate GHG emissions and energy consumption:

- Natural gas use;
- Electricity produced;
- Diesel consumption in equipment; and
- Minor fuel consumption such as oils and greases, LPG and acetylene, if above reporting thresholds.

3.2 REVIEW OF THE GHGMP

Perth Energy will undertake an annual review of this GHGMP to ensure it:

- Is accurate;
- Captures all up to date information and site practices;
- Integrates any updated plans and forecasts for site operations; and
- Is in alignment with all current legislation and regulatory requirements.

Perth Energy will also review the GHGMP as required by any future conditions in the Ministerial Statement (if required and approved).

3.3 ADAPTIVE MANAGEMENT

This GHGMP has been developed to avoid and minimise the GHG emissions of the Proposal. Perth Energy aims to achieve this by implementing the mitigation and management measures outlined in this GHGMP. The success of the GHGMP will be measured against Condition requirements, EPA objectives for GHG emissions and Perth Energy's GHG emission aspirations.

Perth Energy has designed this GHGMP to incorporate an adaptive management and review strategy. This strategy includes ongoing evaluation of monitoring data to determine if the environmental objectives are being met. In the event that the GHGMP is failing to achieve the objectives defined in Section 2.2, Perth Energy will initiate a review of the GHGMP. If the GHGMP is revised as a result of this review a copy of the GHGMP and a summary of the GHGMP will be submitted to the Department of Water and Environmental Regulation (DWER) for approval.

In addition to the above, significant changes to the Proposal or updated information gathered through further investigations (e.g., updates to process flowsheet design and/or further optimisation studies) will also trigger review of the GHGMP. Perth Energy will also continue to

periodically review current best practice technologies for consideration for implementation in the Proposal.

In order to facilitate an adaptive management approach, Perth Energy will revise the GHGMP every five years. Each revision will draw on information learned in the preceding years and will typically include a review of following:

- Assumptions and uncertainties;
- The performance of the GHGMP;
- Re-evaluation of the risk assessment;
- External changes during the life of the Proposal; and
- Management actions, considering:
    - If new abatement technology is proposed to achieve interim and long-term targets in Section 2.2 not already considered;
    - If a new process or activity is proposed to be introduced that has the potential to significantly change the emissions from the Proposal, and that was not already considered (and that is not in accordance with this GHGMP);
    - Comments from the EPA, DWER and other decision-making authorities during the EP Act assessment processes;
    - Applicable changes in State or Commonwealth climate change legislation or policy; and
    - Material changes in risk (opportunities, processes and procedures) related to climate change identified by Perth Energy.

In addition to the above, Perth Energy will consider committing to the following conditions in the next five-year revision of the GHGMP (2030):

- Outlining other relevant potential GHG emission abatement measures that were considered but not proposed to be implemented;
- Provide a rationale as to why the abovementioned abatement measures were not implemented; and
- Provide a brief discussion on the feasibility and availability of offsets.

4 REPORTING

4.1 NATIONAL GREENHOUSE AND ENERGY REPORTING

Under the NGER scheme, corporations that exceed the corporate and facility thresholds for emissions, energy production or energy consumption need to report annually to the Clean Energy Regulator (Clean Energy Regulator, 2024). This Proposal will meet the NGER threshold and Perth Energy is required to register as a controlling corporation under the NGER Scheme and report annually.

4.1.1 PUBLIC REPORTING

Perth Energy will make the latest confirmed GHGMP publicly available on their website, along with a summary of the latest confirmed GHGMP.

Reports on the progress against the commitments and interim targets identified in emissions reductions trajectories in this GHGMP will be provided annually, along with consolidated reporting aligned with the 5-year milestones set out in the Paris Agreement (e.g. 2030, 2035 etc.).

Each time the GHGMP is revised and submitted to DWER for approval, Perth Energy will prepare and submit a separate summary of the GHGMP to the CEO for public disclosure. The summary will outline key information from the GHGMP (and reports to that time) in an accessible form which can be easily reviewed by third parties for transparency.

5 GLOSSARY

Term	Meaning
/a	Per annum
ACCUs	Australian Carbon Credit Units
AEMO	Australian Energy Market Operator
AGL	AGL Energy Limited
°C	Degrees Celsius
CH_4	Methane
CO_2	Carbon dioxide
$CO_{2\text{-}e}$	Carbon Dioxide Equivalent
CCGT	Combined-cycle Gas Turbine
DCCEEW	Department of Climate Change, Energy, the Environment and Water
DWER	Department of Water and Environmental Regulation
EP Act	*Environmental Protection Act 1986* (WA)
EPA	Environmental Protection Authority
ESOO	Electricity Statement of Opportunities
GHG	Greenhouse Gas
GHG Protocol Corporate Standard	GHG Protocol Corporate Accounting and Reporting Standard
GHGMP	Greenhouse Gas Management Plan
GJ	Gigajoule
GWP	Global Warming Potential
ha	Hectare
ICROA	International Carbon Reduction and Offsetting Accreditation
km	Kilometres
LNG	Liquified Natural Gas
LPG	Liquid Petroleum Gas
m	metres
Mt	Million tonnes
MW	Mega Watt
MWh	Mega Watt hour
N_2O	Nitrous oxide
NGER	National Greenhouse and Energy Reporting
NGO	Non-governmental Organisations
NOx	Oxides of Nitrogen
OCGT	Open-cycle Gas Turbine
OEM	Original equipment manufacturer
Perth Energy	Western Energy Pty Ltd
Proposal	Kwinana Swift Power Station Expansion Project
RCM	Reserve Capacity Mechanism
RET	Renewable Energy Target

Term	Meaning
SERS	Sectoral emissions reduction strategy for Western Australia
SRMC	Short-Run Marginal Cost
SWIS	South West Interconnected System
t	Tonnes
TPS	Town Planning Scheme
WA	Western Australia
WEM	Wholesale Electricity Market

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7 APPENDICES

APPENDIX 1: BENCHMARKING REVIEW DATA

Table 10: Benchmarking data

Facility Name	State	Electricity Production (MWh)	Total Emissions	Emissions intensity (t $CO_{2\text{-}e}$/MWh)	Grid Connected	Grid	Primary fuel	Facility type/technology
Mica Creek Power Station	QLD	149,476	49,174	0.33	On	Mt Isa	Natural Gas	Combined Cycle; Siemens SGT-800 Gas Turbines
Cockburn Power Station	WA	1,306,506	487,712	0.37	On	SWIS	Natural Gas	Combined Cycle; Alstom GT13E2 Gas Turbine
Tallawarra Power Station	NSW	1,216,119	457,982	0.37	On	NEM	Natural Gas	Combined Cycle; Alstom GT26 Gas Turbine
Swanbank E Power Station	QLD	839,557	340,491	0.40	On	NEM	Natural Gas/Coal Seam Gas	Combined Cycle; Siemens V94.2 (SGT5-2000E) Gas Turbine
Pelican Point Power Station	SA	1,710,400	689,892	0.40	On	NEM	Natural Gas	Combined Cycle; Mitsubishi M701F Gas Turbines
Kwinana Gas Fired Power Station	WA	1,458,348	584,031	0.40	On	SWIS	Natural Gas	Combined Cycle; Siemens V94.2 (SGT5-2000E) Gas Turbines
Diamantina Power Station	QLD	1,882,190	780,957	0.41	On	Mt Isa	Natural Gas	Combined Cycle; Siemens SGT-800 Gas Turbines
Osborne facility	SA	440,638	185,019	0.41	On	NEM	Natural Gas	Combined Cycle; Siemens V94.2 (SGT5-2000E) Gas Turbine
Yarnima Power Station	WA	782,093	336,179	0.43	Off	Off-grid	Natural Gas	Combined Cycle; GE LM6000 Gas Turbines
Pine Creek A Power Station	NT	196,221	91,717	0.47	On	DKIS	Natural Gas/Diesel	Reciprocating Engines; Wärtsilä 20V34SG Engines; Open Cycle
Newman Power Station	WA	798,399	379,196	0.47	Off	Off-grid	Natural Gas/Diesel	Reciprocating Engines; Wärtsilä 50DF Engines; Open Cycle
McArthur River Power Station	NT	293,703	141,369	0.48	Off	Off-grid	Natural Gas	Reciprocating Engines; Caterpillar 3616 Engines; Open Cycle

Facility Name	State	Electricity Production (MWh)	Total Emissions	Emissions intensity (t $CO_{2\text{-}e}$/MWh)	Grid Connected	Grid	Primary fuel	Facility type/technology
Onslow Power Station & Onslow Distribution Network	WA	19,595	9,533	0.49	Off	Off-grid	Natural Gas/Diesel	Reciprocating Engines; Cummins QSK60 Engines; Open Cycle
South Hedland Power Station	WA	554,563	270,158	0.49	On	NWIS	Natural Gas	Combined Cycle; GE Frame 9E Gas Turbines
Paraburdoo Power Station	WA	541,351	270,649	0.50	On	NWIS	Natural Gas/Diesel	Reciprocating Engines; Caterpillar 3616 Engines; Open Cycle
Kwinana Swift Power Station Project Expansion*	WA	389,498	195,659	0.51	On	SWIS	Natural Gas	Open Cycle; Turbines to be confirmed
Kwinana Power Station	WA	1,070,204	543,135	0.51	On	SWIS	Natural Gas	Combined Cycle; Siemens V94.2 (SGT5-2000E) Gas Turbines
Ladbroke Grove Power Station	SA	63,771	32,618	0.51	On	NEM	Natural Gas	Open Cycle; Siemens SGT-600 Gas Turbines
West Angelas Power Station	WA	400,678	211,291	0.53	On	NWIS	Natural Gas/Diesel	Reciprocating Engines; Wärtsilä 34SG Engines; Open Cycle
Newport Power Station	VIC	432,895	257,558	0.54	On	NEM	Natural Gas	Open Cycle; Siemens V94.2 (SGT5-2000E) Gas Turbine
Bairnsdale Power Station	VIC	64,227	35,153	0.54	On	NEM	Natural Gas	Open Cycle; GE LM6000 Gas Turbines
Owen Springs Power Station	NT	132,669	71,828	0.54	Off	Off-grid	Natural Gas/Diesel	Reciprocating Engines; Caterpillar G3520C Engines; Open Cycle
Nova Power Station	VIC	9,743	5,260	0.54	On	NEM	Natural Gas	Open Cycle; GE 9E Gas Turbines
Mortlake Power Station	VIC	441,440	248,174	0.55	On	NEM	Natural Gas/Diesel	Reciprocating Engines; Wärtsilä 20V34SG Engines; Open Cycle
HEZ Power Station	NSW	727	984	0.55	On	NEM	Natural Gas/Diesel	Reciprocating Engines; Wärtsilä 34SG Engines; Open Cycle
Leinster Power Station	WA	246,261	135,634	0.55	Off	Off-grid	Natural Gas	Open Cycle; Siemens SGT5-2000E Gas Turbines

Facility Name	State	Electricity Production (MWh)	Total Emissions	Emissions intensity (t CO_{2-e}/MWh)	Grid Connected	Grid	Primary fuel	Facility type/technology
Uranquinty Power Station	NSW	153,013	90,649	0.56	On	NEM	Natural Gas	Open Cycle; GE LM6000 Gas Turbines
Weddell Power Station	NT	447,740	251,486	0.56	On	DKIS	Natural Gas	Open Cycle; GE Frame 6B Gas Turbines
Kalgoorlie Power Station	WA	245,295	137,865	0.56	On	SWIS	Natural Gas/Diesel	Reciprocating Engines; Caterpillar G3616 Engines; Open Cycle
Kambalda Power Station	WA	262,980	146,527	0.56	On	SWIS	LNG/Diesel	Reciprocating Engines; Cummins QSK60 Engines; Open Cycle
Broome LNG Power Station	WA	132,226	75,473	0.57	Off	Off-grid	Natural Gas/Diesel	Reciprocating Engines; Wärtsilä 34SG Engines; Open Cycle
Mt Keith Power Station	WA	289,042	165,136	0.57	Off	Off-grid	Natural Gas	Open Cycle; Pratt & Whitney FT8 Gas Turbines
Kwinana Swift Power Station	WA	106,642	62,227	0.58	On	SWIS	Natural Gas	Open Cycle; AGL GT13E2 Gas Turbines
Torrens Island Power Station	SA	766,715	447,635	0.58	On	NEM	LNG/Diesel	Reciprocating Engines; Caterpillar 3516B Engines; Open Cycle
Fitzroy Crossing LNG Power Station	WA	13,036	7,535	0.58	Off	Off-grid	Natural Gas/Diesel	Reciprocating Engines; Wärtsilä 34SG Engines; Open Cycle
Parkeston Power Station	WA	75,554	43,918	0.58	On	SWIS	Natural Gas	Open Cycle; GE Frame 6 Gas Turbines
Wagerup Power Station	WA	167,155	101,367	0.58	On	SWIS	Natural Gas/Diesel	Reciprocating Engines; Wärtsilä 34DF Engines; Open Cycle
Barker Inlet Power Station	SA	293,867	175,310	0.59	On	NEM	Natural Gas/Diesel	Reciprocating Engines; Caterpillar G3516 Engines; Open Cycle
Carnarvon Power Station & Distribution network	WA	39,595	23,385	0.59	Off	Off-grid	Natural Gas/Diesel	Open Cycle; GE Frame 6B Gas Turbines
Yurralyi Maya Power Station	WA	661,895	388,022	0.59	On	NWIS	Natural Gas	Open Cycle; GE LM6000 Gas Turbines
Exhibition Street	VIC	5	3	0.60	On	NEM	LNG/Diesel	Reciprocating Engines; Cummins QSK60 Engines; Open Cycle

Facility Name	State	Electricity Production (MWh)	Total Emissions	Emissions intensity (t CO_{2-e}/MWh)	Grid Connected	Grid	Primary fuel	Facility type/technology
Derby LNG Power Station	WA	31,405	19,128	0.61	Off	Off-grid	Natural Gas	Combined Cycle; Siemens SGT-800 Gas Turbines
Power Station - Tamar Valley	TAS	81,038	51,253	0.61	On	NEM	Natural Gas/Diesel	Open Cycle; Siemens SGT5-2000E Gas Turbines
Channel Island Power Station	NT	768,011	471,504	0.61	On	DKIS	Natural Gas/Diesel	Reciprocating Engines; Wärtsilä 34SG Engines; Open Cycle
Cape Lambert Power Station	WA	233,360	141,935	0.61	On	NWIS	Natural Gas/Diesel	Reciprocating Engines; Wärtsilä 34SG Engines; Open Cycle
Solomon Power Station	WA	331,917	206,715	0.62	Off	Off-grid	Natural Gas/Diesel	Reciprocating Engines; Caterpillar 3516B Engines; Open Cycle
Mt Magnet Town Power Station	WA	4,162	2,560	0.62	Off	Off-grid	Natural Gas	Open Cycle; Siemens SGT5-2000E Gas Turbine
Colongra Power Station	NSW	212,154	136,103	0.62	On	NEM	Natural Gas	Open Cycle; GE LM6000 Gas Turbine
Mount	NSW	35	23	0.63	On	NEM	Natural Gas	Open Cycle; Siemens SGT-600 Gas Turbines
Quarantine Power Station	SA	197,794	126,055	0.63	On	NEM	LNG/Diesel	Reciprocating Engines; Caterpillar 3516B Engines; Open Cycle
Halls Creek LNG Power Station	WA	11,753	7,494	0.64	Off	Off-grid	Natural Gas/Diesel	Open Cycle; GE Frame 6B Gas Turbines
Oakey Power Station	QLD	113,377	74,133	0.64	On	NEM	Natural Gas	Open Cycle; GE LM6000 Gas Turbines
Laverton North Power Station	VIC	106,312	73,026	0.66	On	NEM	Natural Gas	Reciprocating Engines; Caterpillar G3516 Engines; Open Cycle
Wadeye (Port Keats)	NT	9,507	6,377	0.67	Off	Off-grid	Natural Gas	Open Cycle; Alstom GT13E2 Gas Turbines
Kemerton Power Station	WA	694,109	464,382	0.67	On	SWIS	Natural Gas/Diesel	Reciprocating Engines; Caterpillar G3516 Engines; Open Cycle
Exmouth Power Station Pty Ltd	WA	25,443	17,643	0.69	Off	Off-grid	Natural Gas	Reciprocating Engines; Caterpillar G3516 Engines; Open Cycle
Tennant Creek Power Station	NT	29,546	20,485	0.69	Off	Off-grid	Natural Gas	Combined Cycle; GE Frame 9E Gas Turbines

Facility Name	State	Electricity Production (MWh)	Total Emissions	Emissions intensity (t CO_{2-e}/MWh)	Grid Connected	Grid	Primary fuel	Facility type/technology
Newgen Neerabup Power Station	WA	338,730	235,222	0.69	On	SWIS	Natural Gas/Diesel	Reciprocating Engines; Caterpillar G3516 Engines; Open Cycle
Elliot Generation	NT	3,116	2,218	0.71	Off	Off-grid	Natural Gas	Open Cycle; GE Frame 6 Gas Turbines
Smithfield Gas Turbine	NSW	32,085	24,060	0.72	On	NEM	Natural Gas/Diesel	Reciprocating Engines; Caterpillar G3516 Engines; Open Cycle
YPF UTILITIES PRODUCTION AND SUPPLY	WA	22,122	15,999	0.72	Off	Off-grid	Natural Gas	Open Cycle; Siemens SGT-600 Gas Turbines
Hallett Power Station	SA	70,602	52,045	0.73	On	NEM	Natural Gas	Open Cycle; GE LM6000 Gas Turbines
Somerton Power Station	VIC	80,692	61,027	0.74	On	NEM	Natural Gas	Reciprocating Engines; Caterpillar G3520C Engines; Open Cycle
Katherine Power Station	NT	25,984	19,337	0.74	On	DKIS	Natural Gas	Open Cycle; GE Frame 6 Gas Turbines
Karratha Power Station	WA	102,091	76,555	0.75	On	NWIS	Natural Gas	Open Cycle; GE Frame 6 Gas Turbines
Port Hedland Power Station	WA	461,349	352,397	0.76	On	NWIS	Natural Gas/Diesel	Reciprocating Engines; Caterpillar G3516 Engines; Open Cycle
Yulara Power Station	NT	17,784	13,560	0.76	Off	Off-grid	Natural Gas	Open Cycle; Caterpillar G3516 Engines
Roma Power Station	QLD	21,838	17,546	0.77	On	NEM	Natural Gas	Open Cycle; Wärtsilä 34SG Engines
Ron Goodin Power Station	NT	51,868	40,570	0.78	Off	Off-grid	Natural Gas	Combined Cycle; Siemens SGT-800 Gas Turbines
Alinta Pinjarra Generation Facility	WA	1,636,746	1,299,946	0.79	On	SWIS	Natural Gas	Open Cycle; Caterpillar G3520C Engines
Bolivar Power Station	SA	12,358	9,940	0.80	On	NEM	Natural Gas	Open Cycle; GE LM6000 Gas Turbines
Jeeralang Power Station	VIC	51,904	46,745	0.81	On	NEM	Natural Gas/Diesel	Reciprocating Engines; Caterpillar 3616 Engines; Open Cycle
Leonora Facility	WA	7,666	6,316	0.82	Off	Off-grid	Natural Gas	Open Cycle; Siemens SGT-800 Gas Turbines

Facility Name	State	Electricity Production (MWh)	Total Emissions	Emissions intensity (t $CO_{2\text{-}e}$/MWh)	Grid Connected	Grid	Primary fuel	Facility type/technology
Dry Creek Power Station	SA	32,641	28,272	0.86	On	NEM	Natural Gas	Open Cycle; Siemens SGT-800 Gas Turbines
Mintaro Power Station	SA	50,144	43,099	0.86	On	NEM	Natural Gas	Open Cycle; GE Frame 6 Gas Turbines
Mungarra Gas Turbine Station	WA	5,255	4,687	0.89	On	SWIS	Natural Gas	Open Cycle; GE Frame 6 Gas Turbines
Pinjar Gas Turbine Station	WA	718,062	669,979	0.93	On	SWIS	Natural Gas	Open Cycle; Siemens SGT-600 Gas Turbines
Valley Power	VIC	29,621	30,001	0.94	On	NEM	Natural Gas	Open Cycle; Siemens SGT-600 Gas Turbines
La Trobe	VIC	1	1	1.00	On	NEM	Natural Gas	Open Cycle; GE Frame 6 Gas Turbines
Kalgoorlie Gas Turbine Station	WA	4,465	4,655	1.04	On	SWIS	Natural Gas	Open Cycle; Caterpillar 3616 Engines
Barcaldine Power Station Facility	QLD	5,486	7,032	1.22	On	NEM	Natural Gas	Open Cycle; Caterpillar G3520C Engines
Karratha Temporary Generation Power Station	WA	432	601	1.39	On	NWIS	Natural Gas	Combined Cycle; Siemens SGT-800 Gas Turbines

**Note: Emissions estimates for the Proposal are from an average between 2029 to 2050*