Mount Keith Power Station Capacity Expansion Project - Greenhouse Gas Management Plan

PREPARED FOR TRANSALTA | March2025

1 Summary

Project Name	Mount Keith Power Station Capacity Expansion Project (the Proposal)
Proponent Name	TEC Desert Pty Ltd and TEC Desert No.2 Pty Ltd in partnership as Southern Cross Energy (TransAlta)
Proposal Description and Scope	The Proposal will be a component of TransAlta's existing Southern Cross Energy North (SCEN) network supplying power to BHP Nickel West and potential third-party operators. The Proposal is to construct and operate up to 150MW of gas reciprocating engines to be used in preference to the use of legacy power generation equipment in the Northern Goldfields region of Western Australia. The Proposal will be located on brownfields sites within NiW's existing Mt Keith operations.
Purpose of GHGMP	The GHGMP has been developed, as required by the Greenhouse Gas Emissions 2023 (Guideline), as the predicted emissions from the Proposal will exceed 100,000 tonnes of CO_2-e of Scope 1 emissions. The GHGMP provides an implementable environmental management framework for the Greenhouse Gas Emissions that may result from the Proposal and demonstrates that the EPA's objective for Greenhouse Gas emissions is met during the construction and operation of the Proposal, including achieving net zero emissions by 2050.
Emission Estimates	The Proposal is solely related to the construction and operation of a power plant consisting of gas reciprocating engines. There will be no Scope 2 emissions relating to the Proposal. Scope 1 emissions (tCO_2-e) 60,017 per year averaged over life of the Proposal (of 114,486 for SCEN network) 124,678 peak year (of 237,821 for SCEN network) 1,380,405 total over the life of the Proposal (of 2,633,195 for SCEN network) Scope 3 emissions (tCO_2-e) 3,185 per year averaged over life of the Proposal (8,665 for SCEN network) 7,503 peak year (617,999 for SCEN network) 73,298… total over the life of the Proposal (of 199,293 for SCEN network)
Trajectory of Emissions Reductions	TransAlta is committed to achieving Net Zero emissions from the Proposal by 2050 consistent with State and Commonwealth Government policy. The reductions will take place as part of reductions across the entire SCEN network as per below (SCEN reductions in brackets): 2028 – 2032 550,471 tCO_2-e (1,176,708) 2033 – 2037 406,845 tCO_2-e (869,705) 2038 – 2042 271,220 tCO_2-e (517,375) 2043 – 2047 135,595 tCO_2-e (289,505) 2048 – 2050 16,268 tCO_2-e (34,790)
Other Statutory Decision-making Processes Which Require Reduction in GHG Emissions.	The main other Statutory Decision-maker in relation to Greenhouse Gas Emissions is the Commonwealth Government through the Safeguard Mechanism. Given the emissions are above 100,000 tCO_2-e, TransAlta is required to meet annual reductions targets from a baseline in order to achieve Net Zero emissions by 2050.
Key components in the GHGMP	Key components are detailed in Section 3 & Table 4-1.
GHG EMP Reviews and Reporting	The Ministerial Statement Annual Compliance Assessment Report will provide details on the annual Proposal emissions and the emissions intensity. The GHGMP will be reviewed at least every 5 years, or as required if there is significant change to the operations that may revision of the plan.
Proposed Construction Date	2026 - 2028
EMP required pre-construction?	Yes
Proposed Project End-of-life/Decommissioning Date	23 years after commencement. Decommissioning phase is expected to take 2 years, post closure.

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EPA Greenhouse Gas Management Plan Requirements

GHGMP Requirement	Relevant section in GHGMP
1. A summary of emission estimates	Addressed in *Table 3-1 & Table 3-3*
2. A clear pathway for reducing scope 1 and/or scope 2 emissions over the life of the proposal. This should be consistent with, or exceed, the EPA's minimum expectations for emissions reductions	Addressed in *Section 3-3* with Figure *3-2* showing an indicative emissions trajectory.
3. Transparent emission estimates and clear targets for short- and long-term reductions (noting a minimum expectation of five-year targets)	Addressed in *Table 3-1*
4. Strategies that demonstrate how best practice measures (including proven technologies) have been adopted to avoid or reduce a proposal's scope 1 emissions at commencement, and throughout the life of the proposal through regular reviews	Addressed in *Sections 3-3* which addresses the mitigation hierarchy. *Table 3-2* benchmarks the proposed facility against other facilities. *Table 3-5* provides a summary of how alternatives were considered.
5. Strategies that demonstrate reasonably practicable measures and alternatives have been considered to reduce scope 2 emissions at commencement, and throughout the life of the proposal through regular reviews	There are no Scope 2 emissions generated as a result of the proposal.
6. That consideration has been given to reducing scope 3 emissions, where practicable, throughout the life of the proposal through regular reviews	Addressed in *Section 3-5* and *Table 3-3*
7. Justification for the emissions baseline used and the alternative approaches that were considered to calculating baselines (including an explanation why these were not adopted)	Justification for the use of 2023 as the baseline year for estimates in provided in *Section 3-2*
8. A demonstrated commitment to continuous improvement to ensure emissions reductions over the life of the project. This should include a consideration of measures to improve performance or setting targets for emissions intensity improvement over time	*Sections 4.1 & 4.2* address this. *Section 3.3* addresses mitigation measures and 5 yearly reviews of targets. *Table 2-1* includes management objectives *Table 3-4* includes emissions reductions targets *Table 3-6* outlines the management actions that will be implemented.
9. Implementation of a GHG emissions offset package to offset residual emissions for Scope 1 and Scope 2 emission sources that cannot be avoided or reduced to achieve proposed commitments and targets. In some cases, it may also be reasonably practicable to offset all residual scope 1 and 2 emissions.	*Section 3.8* discusses offsets
10. Whether there are other legal and policy instruments that can regulate GHG emissions from the proposal to meet the EPA's objectives	*Table 3-6* and *Section 3.6* address this requirement.

GHGMP Requirement	Relevant section in GHGMP
11. Demonstrate how the scope 1, 2 and 3 emissions from project operation beyond 2050 is consistent with a global low carbon transition to net zero by 2050 scenario.	The focus of the GHGMP is the decarbonisation of the SCEN to achieve net zero by 2050. *Figure 3-2* shows that emissions will remain at net-zero from 2050 onwards.

Abbreviations

Enter Abbreviation	Enter Full Name
ACCU	Australian Carbon Credit Units
BAU	Business as Usual
BESS	Battery Energy Storage System
CAR	Annual Compliance Report
CER	Clean Energy Regulator
Cth	Commonwealth
dcp	direct current peak
DMIRS	Department of Mining, Industry Regulation and Safety
EP Act	*Environmental Protection Act 1986*
EPA	Environmental Protection Authority
ERD	Environmental Review Document
ERF	Emissions Reduction Fund
ERF	Emissions Reduction Fund
ESD	Environmental Scoping Document
EU	Effective Utilisation
EV	Electric Vehicle
GHG	Greenhouse Gas
GHGMP	Greenhouse Gas Management Plan
ha	Hectares
IPCC	Intergovernmental Panel on Climate Change
km	kilometres
LED	Light Emitting Diode
m	metres
NMK	Nickel West Mount Keith Operations
Mtpa	Megatonnes per annum
MW and MWh	Megawatt and Megawatt Hour
MWdcp	Megawatt direct current peak

Enter Abbreviation	Enter Full Name
N/A	Not Applicable
NGER Act	*National Greenhouse and Energy Reporting Act 2007*
NiW	BHP Nickel West
NLN	Nickel West Leinster Operations
OEE	Overall Equipment Effectiveness
SAG	Semi-autogenous Grinding
SCEN	Southern Cross Energy North
t/h	Tonnes per hour
tCO_2-e	tonnes of carbon dioxide equivalent
TJ	terajoules
USGS	United States Geological Survey
WA	Western Australia

2 Context, Scope and Purpose

2.1 Proposal Description and Scope

TransAlta proposes to construct, operate and maintain up to 150MW of gas reciprocating engines at BHP Nickel West's (NiW) Mt Keith operations mine site (NMK) to meet NiW's expanded processing capacity and future growth. The Proposal will contribute to the emissions of the SCEN through provision of up to 379,200 MWh resulting in annual GHG emissions up to 164,380 tCO_2-e.

The Mt Keith Power Station Capacity Expansion Project (the Proposal) will be connected to TransAlta's existing off-grid Southern Cross Energy North (SCEN) network. This Greenhouse Gas Management Plan (GHGMP) outlines greenhouse gas (GHG) emissions as a result of the construction and operation of the Proposal and how emissions will be managed to assist the State of Western Australia (WA) to reach its goal of net zero emissions by 2050.

TransAlta operates the Southern Cross Energy North (SCEN) power system; one of Western Australia's largest off-grid hybrid systems of generation and transmission lines that supplies electricity to NiW's operations at NMK and Leinster (NLN) in the Northern Goldfields region of Western Australia. The SCEN power system currently licenced for operation has a total capacity that is able to supply the peak demands of NiW's mining operations. As a leading supplier of nickel to the international battery metals market, NiW have a rising demand for electricity supply to support the expansion of mining operations. This rising demand and the need for reliable electricity supply necessitates the development of the Proposal.

NiW has temporarily suspended its nickel operations and so the GHGMP is based on recommencing operations in 2028, however the Proposal is an integral part of TransAlta's energy plan for NiW and supports the continued long-term development of a hybrid renewable energy network to decarbonise NiW's operations. The Proposal will prepare the grid to support additional renewable energy generation (subject to internal and external approvals) to supplement TransAlta's 38MWdcp Northern Goldfields Project.

Under this GHGMP, TransAlta's Proposal will displace more GHG intensive legacy diesel and gas generation on the SCEN. As a result, the Proposal contributes to lowering overall GHG emissions relevant to the more GHG intensive legacy diesel and gas generation, which to meet anticipated energy needs, which would otherwise annually emit up to 509,315 tCO_2-e. Legacy generation is displaced by the Proposal in the sense that the new lower GHG emission reciprocating gas engines will be dispatched first or in preference to legacy generation to meet loads on the SCEN.

TransAlta acknowledges the Western Australian Government's target of net zero emissions by 2050. Although the exact pathway to achieve net zero GHG emissions is subject to uncertainty, TransAlta proposes to align the GHG emissions reduction trajectory for the Proposal with recent Safeguard Mechanism reforms. This will establish an enforceable, annual baseline for the Proposal, relevant to the existing Safeguard Mechanism facilities, aligned with Australia's 2030 and 2050 emission reduction commitments. TransAlta will continue to evaluate the GHGMP to take into consideration technological advancements, legislative amendments, and decarbonisation opportunities as they evolve.

TransAlta is the sole owner and operator of the SCEN network which interlinks multiple power plant systems connected by transmission infrastructure. This scale enables a holistic and integrated approach to emissions reductions which both maximises benefits to network customers and provides opportunities to increase renewable power input and reduce GHG emissions as outlined within this GHGMP.

This GHGMP focuses on integration of the proposal into TransAlta SCEN network, a system that interlinks multiple power plant systems, of which Mount Keith is one component. This scale and the interconnected nature of generation and loads requires a holistic and integrated approach to emissions reductions which both maximise benefits to the network customers and provides opportunities to increase renewable power input and reduce GHG emissions. Following implementation of The Proposal combined with reductions required under the Safeguard Mechanism, the network's expected GHG emissions in 2028 are 237,825 tCO_2-e.

Given that the Project is power generation, emissions for power consumption have been captured in Scope 1 emissions and as such, there are no Scope 2 emissions addressed in this management plan.

Scope 3 emissions have been addressed through the calculations prepared and presented in Appendix A, however, this GHGMP does not seek to provide specific management measures to reduce these Scope 3 emissions but will work closely with NiW to explore ways to reduce such emissions over time.

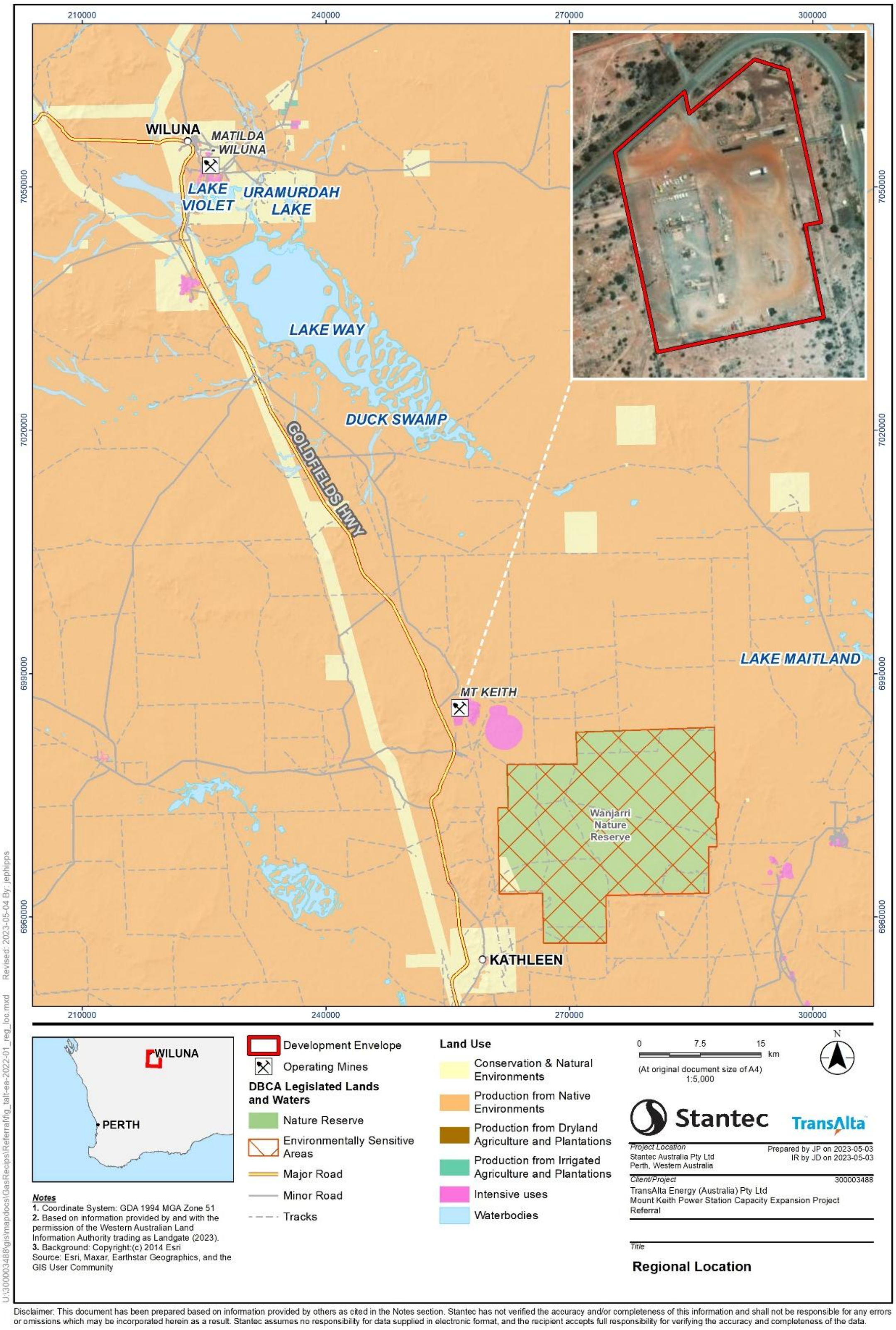

Figure 2-1: Location of the proposed Mount Keith Power Station Capacity Expansion Project

2.2 Purpose of GHG EMP

The following factors have influenced TransAlta's plans to develop the Proposal and this GHGMP:

- Increase in firm power generation required for nickel mining and processing infrastructure with lower emissions;
- Future proofing NMK mining operations based on a range of NiW load scenarios; and
- Climate change driving calls for a sustainable, decarbonised power supply.

These factors are discussed in more detail in the following sections.

2.2.1 Future Load Uncertainty

NiW anticipates future load growth at its NMK site, comprising transformational load projects and potential fleet electrification post-2028. In addition, third parties may also seek connection to the SCEN power system under a power purchasing agreement with NiW, which will further increase future loads on the network.

Given the long-term nature of these projects, future load projections at NMK remain uncertain, with the level of uncertainty increasing across greater time horizons. TransAlta has developed a model that provides a forecast annual load profile to provide the most accurate and conservative assessment of future loads and generation requirements at the NMK site. This model and the GHG emission forecast estimation was independently reviewed by Preston Consulting as part of their peer review of this GHGMP. Load growth is subject to a range of factors and actual changes in load may occur at different times compared with the forecast.

Based on current forecasts, future load growth at NMK is assumed to occur in 2028-2032 with a maximum load of 960,972 MWh, remaining consistent out to 2050. If future load growth is less than expected within the modelling, this will result is subsequently lower emissions.

TransAlta will continue to monitor and review load forecasts and adapt the GHG emission modelling where required to ensure emission reduction targets are met (see Section 4.1 for more detail).

2.3 Key Environmental Factor

EPA Objective: To minimise the risk of environmental harm associated with climate change by reducing greenhouse gas emissions as far as practicable (EPA, 2023).

This GHGMP relates specifically to the EPA's Greenhouse Gas Emissions factor Guidelines (2023) and details management provisions that implement the EPA's mitigation hierarchy to avoid, minimise, rehabilitate, and offset GHG emitted as a result of the Proposal and existing SCEN network. Through alignment with the Safeguard Mechanism's emissions reduction trajectory, the management plan demonstrates how TransAlta plans to meet the intent of the EPA's GHG Factor Guidelines (2023) and achieve net zero emissions by 2050. It is noted that both the Paris Agreement (United Nations 2015) and the Intergovernmental Panel on Climate Change (IPCC) recommends net zero emissions by 2050 in their Sixth Assessment (IPCC 2021). This Management Plan has been prepared in accordance with the EPA's Greenhouse Gas Emissions Factor Guidelines (EPA 2023) and will be revised as the Proposal evolves towards commencement.

The scope of the GHGMP covers:

- The intended reductions in Scope 1 emissions over the life of the Proposal and the existing SCEN network;
- Regular interim and long-term GHG emissions reduction targets that reflect an incremental reduction in Scope 1 emissions over the life of the Proposal; and
- Strategies which demonstrate that all reasonable and practicable measures have been applied to avoid, minimise, and offset the Proposal's Scope 1 emissions over the life of the Proposal.

Given that the Proposal is power generation, emissions for power consumption have been captured in Scope 1 emissions and therefore Scope 2 emissions are not addressed in this management plan.

Key considerations and assumptions of the GHGMP, including how GHG emission modelling of the SCEN has been undertaken, are presented in **Appendix A**.

Scope 3 emissions have been addressed through the calculations prepared and presented in Appendix A.

2.4 Objectives

This GHGMP aims to outline TransAlta's intended reductions in Scope 1 emissions which are founded in the objectives detailed in **Error! Reference source not found.**~~Table 2-1~~

Table 2-1: Management Objectives

Objective	Response
Implement TransAlta's 'Accelerating Clean' Strategy for the SCEN	With a company-wide pathways for decarbonisation of their assets with a 2050 target of net zero, the SCEN will also meet the EPA's objectives.
Progress towards achieving net zero emissions by 2050	As required by State policy, all proposals undergoing environmental impact assessment under the EP Act must set emissions reduction targets in line with the State's net zero aspiration of 2050. The SCEN will achieve this target.
The Mt Keith Power Station Capacity Expansion Project to be included in NGER annual reporting with relevant baselines being determined and complied with, based on the reforms to the Safeguard Mechanism being undertaken as part of the National Greenhouse and Energy Reporting (Safeguard Mechanism) Amendment (Reforms) Rule 2023	Under the reforms to the Safeguard Mechanism, TransAlta's understanding is that the Mt Keith Power Station Capacity Expansion Project will be an extension to the existing Mt Keith Power Station facility for reporting purposes. A baseline will be established prior to construction. The emissions from the Mt Keith Power Station Capacity Expansion Project will be maintained at, or below, the baseline as required by the Safeguard Mechanism. In the instance that there is an exceedance, TransAlta will procure and surrender ACCU's or other offsets to meet its obligations. TransAlta notes that it will not be eligible for Safeguard Mechanism Credits.
Undertake GHG emissions monitoring and reporting	In accordance with the Commonwealth National Greenhouse and Energy Reporting Act 2007 (Cth), monitoring and reporting of annual GHG emissions will be conducted.
Achieve emission reduction targets (Table 3-4)	Five yearly reports to the EPA will be submitted to monitor and report on the tracking of the Proposal's GHG emissions in the context of this GHGMP.

3 GHG Management Plan Components

3.1 Greenhouse Gas Emissions

The Proposal is expected to produce GHG emissions from the generation of electricity to supply NiW's Northern Goldfields operations. A detailed breakdown of the emissions estimation is provided in Appendix A. The methods and emission factors provided by the National Greenhouse and Energy Reporting (NGER) (Measurement) Determination 2008 were used to develop emissions estimates.

TransAlta proposes to meet its customers' load growth through the addition of up to 150MW of medium-speed reciprocating gas engines referred to in the Proposal, along with the 38MWdcp Northern Goldfields Solar Project. Through GHG modelling, the impact on fuel consumption on the SCEN as a result of these initiatives is estimated by modelling the renewable energy that may be generated in each interval and the remaining generation required to be provided by firm generation assets.

3.1.1 Scope 1 Emissions Estimate

Emissions from three scenarios have been calculated to determine the ways in which GHG emissions can be managed. The Proposal will provide a reduction in GHG emissions relative to the 'Business as Usual' scenario where TransAlta meets existing and future load using its current legacy diesel and gas turbine generation. Emissions are also mitigated by the Proposal through the development of the 38MWdcp Northern Goldfields Solar Project which is now operational

The three scenarios have been defined as:

- **Business as Usual**: Existing and future load met with existing diesel and less-efficient gas turbine generation including 38MWdcp Northern Goldfields Solar Project and 10.76MW BESS.
- **Proposal**: Existing and future load growth met through the addition of up to 150MW of medium-speed reciprocating gas engines, as referred to the EPA under the Proposal.
- **Emission Reduction Trajectory**: Facilitated by the installation of the 150MW gas reciprocating engines under the Proposal, further emissions reducing infrastructure and development of additional renewable energy generation in the future to reduce GHG emissions, allowing existing less efficient infrastructure to be displaced. Further emissions mitigation management measures that will fulfil this emission reduction trajectory are detailed in Section 3.3. This trajectory is target based and seeks to align the Proposal targets with the default decline rates outlined in the NGER (Safeguard Mechanism) Rule 2015 (s32). This trajectory will be further refined in future iterations of this GHGMP as specific reductions based on available technologies become clearer.

Modelled emissions for the Proposal (Proposed Mt Keith Power Station Capacity Expansion Project scenario) assume a partial continued use of legacy gas generation for operational purposes. Where legacy gas generation usage is reduced or ceases, actual emissions from the Proposal may increase by an amount equivalent to the displaced emissions from the legacy generation, and not exceeding forecast peak Scope 1 emission levels for the SCEN network. In this scenario however, total overall Scope 1 emissions will be lower than current modelled levels due to the use of more efficient generation.

TransAlta's initiatives for the SCEN network will ensure it achieves the targeted emission reductions outlined within this GHGMP and net zero by 2050. This plan will be continually adapted over time to provide a suitable pathway to 2050 that is aligned with TransAlta's commitment to net zero and its obligations made in the Proposal.

GHG emission estimates for the Proposal have been determined for the life of the Proposal from 2023 to 2050, with a baseline year of 2023. TransAlta was selected as the baseline year for calculations as this was the last full year of emissions prior to NiW temporarily suspending operations. Other potential baseline years are not typical due to a range of factors including inconsistent load requirements, prolonged shutdowns of operations and a high number of unplanned outages where generation was unavailable.

~~Table 3-1~~ illustrates emissions from ‘Business as Usual’ scenario in comparison to the ‘Proposal’ scenario in which 150MW of reciprocating gas engines are added to the SCEN over time, as well as the ‘Emission Reduction Trajectory’ scenario. Under this GHGMP, the total estimated GHG emissions for the Proposal life 2023 and 2050 are 2,633,195 $tCO_{2\text{-}e}$ with peak annual emissions (once all proposed infrastructure is implemented) in 2028, during normal operations, of up to 237,825 $tCO_{2\text{-}e}$. This represents approximately 0.38% of Western Australia’s GHG emissions, based on 2020 data of 82.12 $MtCO2_{\text{-}e}$. As the Proposal’s annual emissions are expected to be greater than 25kt of $CO_{2\text{-}e}$, the Proposal will be subject to the requirements of the National Greenhouse and Energy Reporting Act 2007 (Cth) (NGER Act).

Table 3-1: Annual GHG emissions for Associated with Mount Keith Power Station Capacity Expansion Project

Year	Business as Usual (tCO_2-e)	Emissions including Proposal (tCO_2-e)	Emission Reduction Trajectory (tCO_2-e)	Unmitigated Emissions from Operation of the Proposal	Emissions Reductions Trajectory for the Proposal in isolation (tCO_2-e)	Emission Mitigation Projects	Emissions Reductions compared to Business as Usual (tCO_2-e)	Safeguard Mechanism Baseline - Default Decline Rate	5-yearly cumulative emission reductions (Proposal in brackets) (tCO_2-e)
2020	353,000 (diesel, gas)	353,000	353,000					N/A	N/A
2023 (baseline year)	315,000 (165,136 CO_2-e from Mt Keith)	315,000	315,000	0	0	38MWdcp Solar Farm and 10.76MW BESS operational	0	N/A	
2024	315,000	315,000	315,000	0	0		0	4.9%	
2025	35,565	35,565	35,565	0	0	Temporary suspension of operations (preservation load).	0	4.9%	
2026	42,170	42,170	42,170	0	0	Temporary suspension of operations & Wedgetail Mine Development	0	4.9%	
2027	42,170	42,170	42,170	0	0	Temporary suspension of operations (preservation load).	0	4.9%	
2028	423,887	394,301	237,825	164,380	124,678	Recommencement of operations, with Gas Recips along with renewable sources	186,062	4.9%	1,176,708 (550,471)
2029	426,209	396,578	222,390	164,380	116,586		-203,819	4.9%	

Year	Business as Usual (tCO_2-e)	Emissions including Proposal (tCO_2-e)	Emission Reduction Trajectory (tCO_2-e)	Unmitigated Emissions from Operation of the Proposal	Emissions Reductions Trajectory for the Proposal in isolation (tCO_2-e)	Emission Mitigation Projects	Emissions Reductions compared to Business as Usual (tCO_2-e)	Safeguard Mechanism Baseline - Default Decline Rate	5-yearly cumulative emission reductions (Proposal in brackets) (tCO_2-e)
2030	455,922	425,732	206,955	164,380	108,494	Implementation of renewable energy projects	-248,967	4.9%	
2031	465,208	434,842	196,607	164,380	103,069		-268,601	3.285%	
2032	509,315	466,901	186,259	164,380	97,644		-323,056	3.285%	
2033	509,315	466,901	175,911	164,380	92,219		-333,404	3.285%	869,705 (406,845)
2034	509,315	466,901	165,563	164,380	86,794		-343,752	3.285%	
2035	509,315	466,901	155,215	164,380	81,369		-354,100	3.285%	
2036	509,315	466,901	144,867	164,380	75,944		-364,448	3.285%	
2037	509,315	466,901	134,519	164,380	70,519		-374,796	3.285%	
2038	509,315	466,901	124,171	164,380	65,094		-385,144	3.285%	517,375 (271,220)
2039	509,315	466,901	113,823	164,380	59,669		-395,492	3.285%	
2040	509,315	466,901	103,475	164,380	54,244		-405,840	3.285%	
2041	509,315	466,901	93,127	164,380	48,819		-416,188	3.285%	
2042	509,315	466,901	82,779	164,380	43,394		-426,536	3.285%	
2043	509,315	466,901	72,431	164,380	37,969		-436,884	3.285%	289,905 (135,595)
2044	509,315	466,901	62,083	164,380	32,544		-447,232	3.285%	
2045	509,315	466,901	51,735	164,380	27,119		-457,580	3.285%	
2046	509,315	466,901	41,387	164,380	21,694		-467,928	3.285%	
2047	509,315	466,901	31,039	164,380	16,269		-478,276	3.285%	
2048	509,315	466,901	20,691	164,380	10,844		-488,624	3.285%	34,790 (16,268)
2049	509,315	466,901	10,343	164,380	5,424		-498,972	3.285%	
2050	509,315	466,901	0	164,380	0		-509,315	3.285%	

N.B. Safeguard Mechanism decline rates are sourced from the NGER (Safeguard Mechanism) Rule 2015. Decline rates are subject to change, with DCCEEW indicating that the decline rates for FY2031 to FY2050, subject of 2027 consultation.

Based on this assessment, the forecast GHG emissions intensity of the Proposal during normal operations from 2032 is approximately 0.43 tCO_{2-e} per MWh, with the emissions from the SCEN being approximately 0.48 tCO_{2-e}. These figures were comparable to similar multi-sourced power stations in Western Australia at the time of calculations.

Without mitigation, over its life the Proposal would, based on 164,380 $tCO_{2-e.}$ per annum for 23 years, result in emissions of up to 3,780,740 $tCO_{2-e.}$

To develop an implementable and auditable GHGMP, the calculation of emissions and emission intensity used methods and emission factors provided by the NGER (Measurement) Determination 2008. Through the use of this information, the GHGMP captures an appropriate level of detail and ensures achievable targets are set for monitoring and compliance reporting. Furthermore, these calculations enable appropriate avoidance and mitigation measures to be identified and implemented.

3.1.1.1 Key Assumptions and Uncertainties

Scope 1 emissions were determined using a generation model developed by TransAlta to forecast future loads, generation dispatch and fuel consumption which incorporates the following:

- Temporary suspension of operations until 2028.
- Normalised[1] 2022 actual generation for each 30-minute interval is used as the baseline load for each interval in subsequent years
- Additional loads, based on the average expected additional load advised by NiW, are added to each Interval to arrive at a forecast load for each year/date/time.
- Forecast generation from the 38MWdcp Northern Goldfields Solar Project which is expected to be commissioned in H1 2023
- Generation capacity of each engine during the interval (based on historic ambient temperatures)
- Changes in generating assets (i.e., addition of solar, gas reciprocating engines, wind etc)
- 10 days outages per annum for each gas turbine for planned and unplanned maintenance
- Dispatch given minimum generation levels, merit order, spinning reserve and outages
- Net solar production, incorporating degradation
- Fuel consumption for each generator based on the level of loading and generator heat rate curve
- Assumptions relating to forecast new renewable energy generation, including any curtailment
- Assumptions relating to future load growth forecast out to 2032, after which load growth is assumed to be fixed
- Assumes a percentage of generation will continue to be required to support the heat drying function at Leinster for NiW's operations

A comprehensive breakdown of the GHG emission estimation modelling is included in Appendix A Greenhouse Emissions Estimation.

Construction activities are also considered in the above estimation and are only a small percentage of overall emissions. Activities considered in determining these construction and operational activities include:

- Construction schedules and programs for Stage 1 and Stage 2
- Type and length of time construction vehicles are used onsite
- Emissions associated with running the onsite office

[1] Normalisation involves removing the impact of unscheduled or one-off outages, such as blackout events

- Size of workforce during construction and operation
- Light vehicle movement of people during construction

3.1.1.2 Benchmarking of Scope 1 Emissions

Emissions intensity at a particular facility is a measure of the tonnes of GHG emitted per MWh (t CO_2-e/MWh) and is a gauge that is used to benchmark and compare against other power facilities/networks. Publicly available data of similar projects provide information on the annual scope 1 emissions and annual facility electricity generation. Emissions intensity is calculated as the following:

$$Emissions\ Intensity = \frac{Scope\ 1\ Emissions}{annual\ electircity\ generation}$$

Under the Emission Reduction Trajectory Scenario. the proposal will lead to an improvement over time of emissions intensity on the SCEN. The emissions intensity for the SCEN, including the Proposal, but without the addition of further renewable sources, has been calculated as 0.48t CO_2-e/MWh, with:

- Forecast peak annual scope 1 emissions as 466,901 t CO2-e in 2032
- Forecast electricity generation per annum as 960,972 MWh

Table 3-2 and **Figure 3-1**, below, compare the emissions intensity of The Proposal with other comparable scale of electricity generation at gas power stations in Western Australia. These figures do not include the addition of future renewable energy sources, which would substantially reduce the emissions intensity.

The emissions intensity of the proposed new power station at Mount Keith, in isolation, is 0.43 tCO_{2-e} based on 379,200 MWh of power generation with annual emissions of 164,380 $tCO_{2-e.}$

Table 3-2: Emissions intensity benchmarks (excluding the addition of renewable energy sources to the SCEN)

Entity	Facility	Power Generation Type	Year	Source.	Annual Electricity Generation (MWh)	Scope 1 annual emissions (tCO_2 -e)	Emissions Intensity for $CO_{2\text{-}e}$/t MWh)	Emissions Intensity (t $CO_{2\text{-}e}$/t MWh) (Business as usual scenario)
Newgen Kwinana Holdings	Kwinana Gas Fired Power Station	Gas Fired Generation	2021	CER 2021	2,027,187	795,750	0.39	-
Alcoa Australian Holdings	Alinta Pinjarra Generation Facility	Gas Fired Generation	2021	CER 2021	1,594,393	1,086,799	0.68	-
International Power (Australia) Holdings	Kwinana Cogeneration Plant	Gas Fired Generation	2021	CER 2021	780,046	403,342	0.52	-
BHP Group Limited	Yarnima Power Station	Gas Fired Generation	2021	CER 2021	747,514	343,639	0.46	-
Electricity Generation and Retail Corporation	Kwinana Power Station	Gas Fired Generation	2021	CER 2021	669,920	354,786	0.53	-
Default Emission Intensity	-		2022	Schedule 2, Safeguard Mechanism Rule	-	-	0.539	-
TransAlta Energy (Australia)	SCE North Network (excluding addition of renewable sources)	Gas Fired Generation & Solar	2025 - 2027	Appendix A	72708	37808	0.52	0.52
			2028	Appendix A	799,788	394,301	0.49	0.53
			2032	Appendix A	960,972	466,901	0.48	0.53

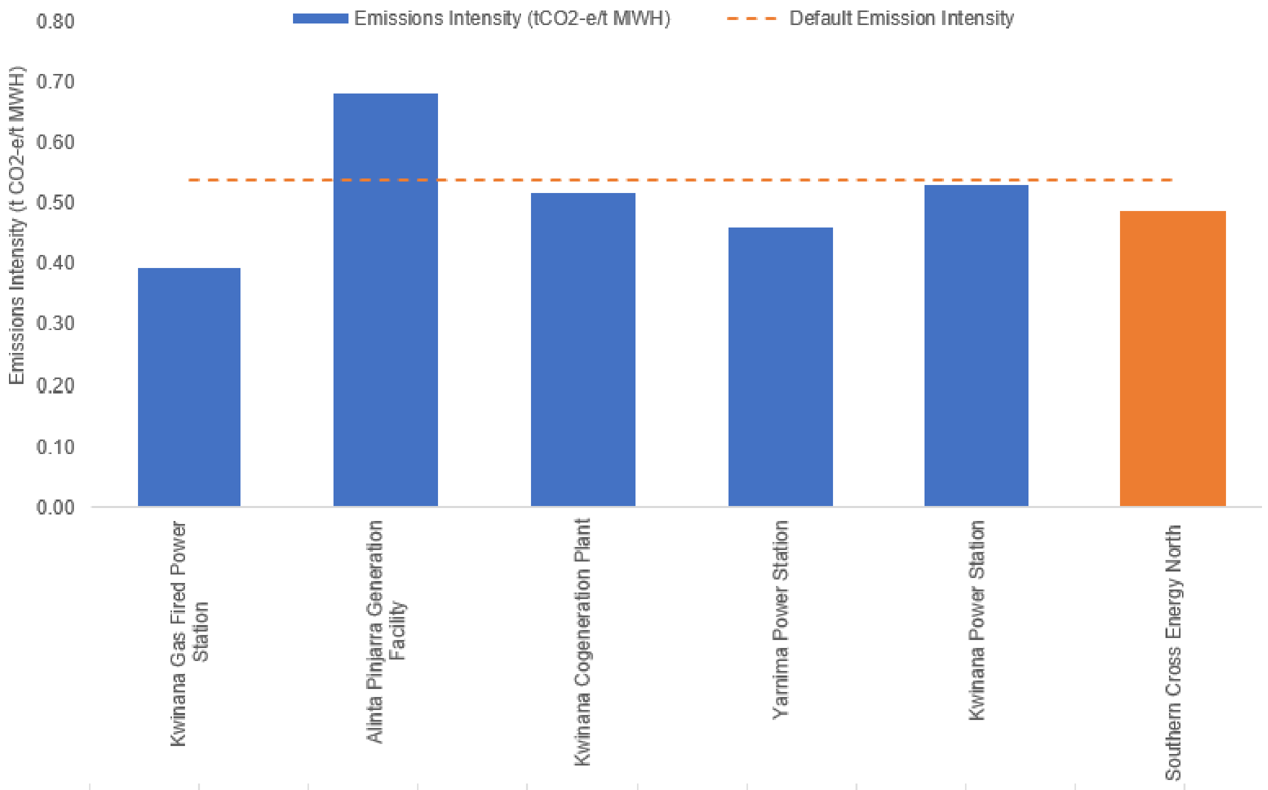

Figure 3-1: Comparative emissions intensity for gas power stations in WA based on 2020-2021 reported figures and estimated emissions for the SCEN in 2032

3.1.2 Scope 2 Emissions Estimate

There will be no scope 2 emissions as a result of the Proposal.

3.1.3 Scope 3 Emissions Estimate

As detailed in the calculations in Appendix A, Scope 3 emissions for the SCEN network, based on the 'Proposal Scenario' where the solar farm, up to 150MW of gas reciprocating engines are installed, are expected to peak at 6,946 tCO_2-e. It is anticipated that 2024 will be the last year that diesel will be relied on as a key power source on the SCEN network. Moving forward towards 2030 and beyond, Scope 3 emissions have been determined using the National Greenhouse Accounts (NGA) Factors in Appendix 4 of the 2021 version as an indirect result of the gas consumed by the gas reciprocating engines (production and transportation) and will average approximately 2,862 tCO_2-e per year between 2028 and 2050. Error! Reference source not found.~~Table 3-~~**3** below outlines the estimated Scope 3 emissions, taking into consideration the Safeguard Mechanism reductions, as well as a comparison against unmitigated emissions.

Table 3-3: Scope 3 emissions expected at the SCEN network

Year	**SCEN Network Scope 3 emissions (tCO_2-e)**	Unmitigated Network Scope 3 **emissions (tCO_2-e)**
2024	9,107	9,107
2025	883	883
2026	1047	1047
2027	1047	1047

Year	SCEN Network Scope 3 emissions (tCO_2-e)	Unmitigated Network Scope 3 emissions (tCO_2-e)
2028	17,999	35,337
2029	16,721	35,312
2030	14,480	34,968
2031	10,385	34,764
2032	8,665	34,626
2033-2050	up to 8,665	up to 34,626

These emissions will reduce as the reductions required by the Safeguard Mechanism are applied.

TransAlta will explore options for reducing Scope 3 emissions, where practicable, throughout the life of the proposal through regular reviews and in line with 5-yearly reviews of the management plan, with a view to improving performance.

3.2 Trajectory of Emissions

An indicative progression of emission reductions can be seen in **Figure 3-2**. The graph illustrates a steady decline in emissions from year one that will be achieved through avoidance and mitigation measures, until 2050, where all residual emissions that cannot be avoided or mitigated must be offset.

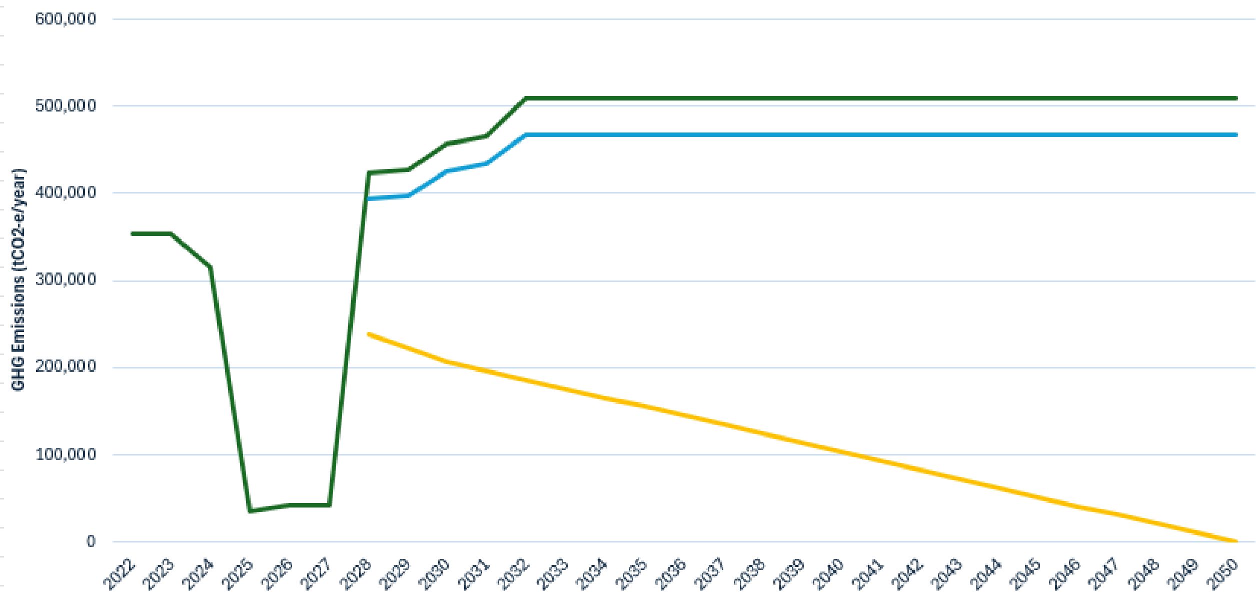

Figure 3-2: Emissions profile

In Figure 3-3, the 2020 the green line shows the business-as-usual emissions of generated electricity for each year going out to 2050. The drop in 2023 represents the introduction of solar generated electricity from the NMK and NLN solar farms. The drop in 2025 through to 2028 is indicative of the temporary suspension of operations. Following recommencement of operations energy demand is anticipated to rise as nickel production ramps up, offsetting the solar electricity added. The blue bar shows the emissions impact of gas recips only without any further addition of renewable energy generation. required Safeguard Mechanism reductions following resumption of nickel mining.

The grey bar shows the Indicative GHG emission reductions required that have been estimated by applying the cumulative Safeguard Mechanism Baseline Decline Rate (%) to Total Scope 1 Emissions, as specified in Error! Reference source not found.~~Table 3-4~~ below. During the execution of The Proposal, actual reductions will be calculated by applying the Safeguard Mechanism Baseline Decline Rate (%) to the actual emissions of the Proposal, as detailed in Section 3.6.1.

Table 3-4: Emission Reduction Targets

(Proposal emission in brackets)

Target Year	2023	2030	2035	2040	2045	2050
Total Scope 1 Emissions of The Proposal (using gas recips & solar) (tCO2-e)	315,000 (165,136)	425,732 (164,380)	466,901 (164,380)	466,901 (164,380)	466,901 (164,380)	466,901 (164,380)
Indicative Emissions Reduction from baseline year (2023) with incorporation of renewables (tCO2-e)	n/a	83,709 (56,642)	141,059 (83,767)	199,039 (110,892)	257,019 (138,017)	315,000 (165,136)
Required Baseline Decline Rate (%)	n/a	26.6 (34.3)	44.8 (50.7)	63.2 (67.1)	81.6 (83.6)	100.00

N.B. Safeguard Mechanism decline rates have been sourced from the NGER (Safeguard Mechanism) Rule 2015. Decline rates are subject to change, with DCCEEW indicating that the decline rates for FY2031 to FY2050, subject of 2027 consultation.

Performance against the above emission reduction targets will be reviewed on at least a five-yearly basis and actual performance will be reviewed against the target emissions in **Table 3-4**. Targets are aligned to the Safeguard Mechanism's emission reduction trajectory, which ensures at least a linear reduction in emissions over time to meet the expectations of the EPA's Greenhouse Gas Emissions factor Guidelines (2023) of "deep and substantial emissions reductions this decade and achievement of net zero emissions no later than 2050 along a linear trajectory (at a minimum) from 2030".

3.3 Mitigation Measures adopted to avoid, reduce of offset Scope 1 emissions

3.3.1 Measures to Avoid

The peak of the EPA's mitigation hierarchy is to avoid causing an impact altogether. Various scenarios were considered when options for additional power supply were analysed to respond to the targets contained in **Table 3-4**. The 'Proposal' scenario was selected as the best option due to its ability to avoid GHG emissions, including increase energy efficiency, use of existing infrastructure and support a greater penetration of renewables in TransAlta's operations.

3.3.1.1 Alternative Considered

As part of project planning, alternative options for power generation were considered, including a 'Business as Usual' scenario, alternative locations, and alternative technologies. It should be noted that the Proposal relates to firming generation. This firming generation is an enabling technology to support renewable sources which have already been approved (solar PV farms and battery storage) or are being considered for the SCEN. Within this context, it is not feasible to consider renewable technologies to provide the firm generation required to meet the around-the-clock load requirements of NiW as outlined below.

The option analysis is detailed in **Table 3-5.**

Table 3-5: Proposal Alternatives Analysis

Option	Location	Technology	Environmental Outcome
Preferred Option Stage 1: **100MW of new medium-speed gas reciprocating engines**	The preferred location for the installation of the new gas reciprocating engines was determined to be a brownfields portion of the NMK mine site previously used as a laydown yard, for the following reasons: No clearing is required for the installation of the gas reciprocating engines. Site has direct access to infrastructure required to enable a gas and electricity connection. No known heritage sites within the proposed boundary. Preferred site was determined in consultation with NiW as the underlying tenement and mine site owner because it did not create a conflict with the company's mining operations or future expansion plans.	The preferred technology was determined to be medium-speed gas reciprocating engines, for the following reasons: Gas reciprocating engines are capable of operating at low loads for extended periods of time and are therefore the most efficient generation to support an increased penetration of renewables, providing network system stability and a pathway to phase out legacy thermal generation assets. The new reciprocating gas engines can be started or stopped quickly in accordance with load fluctuations. Gas reciprocating engines are extremely efficient engines with a very low average heat rate of ~8.3 GJ/MWh. In comparison, the current efficiency of the existing power station achieves a heat rate of ~12 GJ/MWh. A lower heat rate results in an improved emission intensity and an approximate 30% reduction in GHG per MWh. Gas reciprocating engines have the capability to run on a hydrogen blend fuel which may further decrease the emissions footprint in the future.	The proposed option was selected based on the overall reduction of environmental risk: No clearing is required, which minimises potential impacts to flora and vegetation, landforms, terrestrial environmental quality, terrestrial fauna, and social surroundings (such as sites of Aboriginal and European Heritage significance). Load forecasting shows that gas reciprocating engines would result in an 29,586 tCO2-e reduction on 2028 GHG emissions levels when compared to utilisation of existing generation infrastructure. The use of reciprocating gas engines ensures a greater potential to decarbonise the NMK site and allow for a high future penetration of renewable energy.
Preferred Option Stage 2: **50MW of new medium-speed gas reciprocating engines**	The preferred location was determined to be co-located with the existing 100MW of reciprocating engines on a previously disturbed brownfield site or at the current location of existing generation at the NMK site.	As an extension of the above, firm generation will be required in the future to support NiW nickel mining operations. The current most economical and efficient technology to achieve this is additional medium-speed reciprocating gas engines. Additional reciprocating gas engines are dependent upon the forecast loads of NiW as well as the level of renewable penetration into the network. Expanding the initial reciprocating engine power station removes the need to duplicate some infrastructure thereby creating a greater environmental footprint as well as ensuring spares parts, tools, operations and maintenance schedules are largely unchanged.	As an extension of the above, the proposed option was selected based on the overall reduction of environmental risk: The use of new gas reciprocating engines will allow for partial displacement of existing generation at the NMK site under the current load forecast. Under regular operating conditions the new efficient reciprocating engines will be dispatched prior to using the existing diesel and gas generation, therefore meeting loads at lower GHG emissions. At times, new gas generation will fully displace all existing generation. Load forecasting shows that gas reciprocating engines would result in an approximately 42,414 tCO_2-e reduction in 2032 GHG

Option	Location	Technology	Environmental Outcome
			emissions levels when compared to utilisation of existing generation infrastructure.
Utilise existing Mt Keith power station **(i.e., the 'no development' option)**	Current Mt Keith Power Station sites for L7348/1999/10 (diesel generators) and L8801/2013/1 (gas turbines)	The existing Mt Keith Power Station operates under licences L7348/1999/10 (diesel generators) and L8801/2013/1 (gas turbines) issued under Part V of the Environmental Protection Act 1986 (EP Act). These two operating licences allow for a combined capacity of 114MW which exceeds the current NiW load. Additional approvals would therefore not technically be required to increase the output of this generation to meet NiW's additional requirements. Utilising the existing NMK fleet to meet the increased load, in the absence of any new generation, would result in an overall increase in emissions of 29,586 tCO2-e per annum in 2028 and 42,414 tCO2-e per annum in 2032. However, the existing generation fleet is aging, less efficient and materially less reliable than the proposed gas reciprocating engines and therefore presents an increased likelihood of outages, black starts, and excess diesel generation resulting in worse environmental outcomes. Additionally, maintaining the current generation fleet will lead to higher costs over time for TransAlta and NiW due to increasing operation and maintenance costs associated with aging assets and the increasing cost of diesel as a fuel source.	No clearing is required which minimises potential impacts to flora and vegetation, landforms, terrestrial environmental quality, terrestrial fauna, and social surroundings (such as sites of Aboriginal and European Heritage significance). The use of this aging, inefficient plant to meet new loads is not aligned with the decarbonisation goals of TransAlta, NiW or the WA state target. This option would lead to increased emissions of GHG, together with other air pollutants including Oxides of Nitrogen (NOx), Oxides of Sulphur (SOx), Carbon Monoxide (CO) and Particulate Matter (PM), resulting in a higher environmental impact, both immediately and over time. If the Proposal does not proceed, these less efficient diesel generators and gas turbines will continue to operate, presenting an overall increase in GHG emissions over time. In the absence of other forms of generation, the existing NMK generation fleet must be contractually made available to meet new NiW loads, resulting in increased emissions up to 42,414 tCO2-e per annum in 2032.
Combined cycle aeroderivative gas turbines	This gas turbine would be located at the same site as the preferred option and would occupy a smaller footprint than the preferred gas reciprocating engine solution; however, as the site is highly disturbed brownfield, this issue was not seen as critical to the decision-making process.	This technology option consisted of TM2500 combined cycle aeroderivative gas turbines, including steam turbines that would utilise gas fuel to provide firm generation to meet the increased load. This power station would have a higher overall emissions output as it would not have the flexibility of a fleet of reciprocating engines when dealing with changes in load and renewable resources. Specifically, in periods when there are high levels of wind and solar generation, sufficient spinning reserve would need to be maintained to enable the power station to load match during cloudy or calm periods,	No clearing is required which minimises potential impacts to flora and vegetation, landforms, terrestrial environmental quality, terrestrial fauna, and social surroundings (such as sites of Aboriginal and European Heritage significance). This technology would result in overall higher emissions of GHG, NOx, SOx, CO and PM.

Option	Location	Technology	Environmental Outcome
		and all gas turbines operate relatively inefficiently at low loads. The potential need to have one of the existing gas turbines online when net loads approached the capacity of the new system would result in increased emissions when compared to the preferred option, which can operate independently of gas turbines. Reciprocating engines have much faster start times and can also be switched on and off quickly as conditions permit, enabling them to operate more efficiently, more often. The total emissions intensity of other pollutants such as NOx, SOx, CO and PM would also be higher due to the gas turbine being less efficient than reciprocating gas engines, particularly at partial loading.	
Open cycle gas turbines	This gas turbine would be located at the same site as the preferred option and would occupy a smaller footprint than the preferred gas reciprocating engine solution; however, as the site is highly disturbed brownfield, this issue was not seen as critical to the decision-making process.	The open cycle gas turbines have a larger engine that would require a higher level of spinning reserve, or pro-active load shedding, to maintain the system, resulting in higher emissions. This power station would have a higher overall emissions output and intensity as it is less efficient overall and would not have the flexibility of a fleet of reciprocating engines when dealing with changes in load and renewable resources. The total emissions intensity of other pollutants such as NOx, SOx, CO and PM would also be higher due to the gas turbines being less efficient than reciprocating gas engines.	No clearing is required which minimises potential impacts to flora and vegetation, landforms, terrestrial environmental quality, terrestrial fauna, and social surroundings (such as sites of Aboriginal and European Heritage significance). This technology would result in overall higher emissions of GHG, NOx, SOx, CO and PM
Alternative diesel generation	The diesel power station would be located at the same site as the preferred option and would occupy a similar footprint than the preferred gas reciprocating engine solution; however, as the site is highly disturbed brownfield, this issue was not seen as critical to the decision-making process.	Diesel reciprocating engines could be dispatched reasonably effectively; however, they are less efficient, significantly more costly to operate due to fuel cost and more GHG intensive, which makes them less attractive for a transition to net zero. The higher emissions of diesel generators compared to reciprocating gas engines can be seen through a basic comparison of emissions estimation for 100,000 Gigajoule (Gj) produced by either diesel or natural gas via pipeline, according to the National Greenhouse Factors (Australian Government 2021).	No clearing is required which minimises potential impacts to flora and vegetation, landforms, terrestrial environmental quality, terrestrial fauna, and social surroundings (such as sites of Aboriginal and European Heritage significance). This technology would result in overall higher emissions of GHG and an overall increased impact on ecosystems and human health This technology would also result in higher emissions of NOx, SOx, CO and PM.

<table>
<tr><th>Option</th><th>Location</th><th>Technology</th><th>Environmental Outcome</th></tr>
<tr><td></td><td></td><td>As outlined below, diesel produces roughly 36% more emissions than natural gas.
<table>
<tr><th>Fuel</th><th>CO_2</th><th>Methane (CH_4)</th><th>Nitrous Oxide (N_2O)</th><th>All (kg CO_2-e/GJ)</th></tr>
<tr><td>Natural gas – pipeline</td><td>5140</td><td>10</td><td>3</td><td>5153</td></tr>
<tr><td>Diesel oil</td><td>6990</td><td>10</td><td>20</td><td>7020</td></tr>
</table>
This is further supported by studies conducted by Strezov and Cho (2020) to determine the environmental impacts of Australian power stations fuelled by various sources including the fossil fuels hard coal, brown coal, diesel, coal seam methane and natural gas. Diesel fuel was found to be the third most impactful fossil fuel source (after brown and hard coal) in terms of impacts on ecosystems and human health. Natural gas was determined to have the lowest environmental impact of all fossil fuels in the study (Strezov and Cho, 2020).</td><td></td></tr>
<tr><td>Alternative renewable energy facility (wind, solar & battery)</td><td>A number of locations are being actively investigated for renewable energy generation across the SCEN network to support the decarbonisation targets of TransAlta and NiW.</td><td>TransAlta currently has two solar farms and a battery energy storage system included in the SCEN network. Renewables will play a large role in the future decarbonisation of the network as significant new investment will be required to reach net-zero by 2050.

The Proposal is being developed alongside renewables as part of a network energy plan. The Proposal fulfills the immediate requirement to add new, efficient firm generation and spinning reserve to the system to ensure sufficient firm generation is available to meet the increased load and to maintain system security.

Existing renewable energy technology of wind and solar is unable to provide firm power to meet NiW’s 24/7 mining operations when the wind or solar resource is unavailable.

Existing battery storage technology is economically unattractive to provide long-term firm power to cover variability in solar and wind.</td><td>It is likely that some vegetation clearing will be required to accommodate a new solar or wind facility of sufficient scale which may result in impacts arising from loss of flora, vegetation, habitat, or fauna, or impacts related to Aboriginal heritage, landforms, or terrestrial environmental quality.

This technology will result in an overall reduction in CO2, NOx, SOx, CO and PM across the SCEN.</td></tr>
</table>

Option	Location	Technology	Environmental Outcome
Alternative brownfield site at Mt Keith	Alternate sites were considered at NMK including to the east of current mining operations and on adjacent mining tenure. However, all sites considered would require clearing or would conflict with existing NiW mining operations, plant or future expansion plans. Alternate sites also required construction of elevated support pads with potential for impact on hydrology and the surrounding environment.	Medium-speed reciprocating gas engines or future gas generation as mentioned above Logistical issues and potential for new disturbance due to the relocation of existing infrastructure.	Vegetation clearing or relocation of existing infrastructure would be required. This may result in impacts arising from loss of flora, vegetation, habitat, or fauna, or impacts related to Aboriginal heritage, landforms, or terrestrial environmental quality.
Alternative brownfield sites at Leinster	Possible sites were considered at the NLN site on NiW mining lease ML255SA. However, the placement of the Proposal in this area was not considered feasible at this time due to the larger portion of the load being required by NMK.	Medium-speed reciprocating gas engines or future gas generation as mentioned above Logistical issues and potential for new disturbance due to the relocation of existing infrastructure.	Vegetation clearing or relocation of existing infrastructure would be required. This may result in impacts arising from loss of flora, vegetation, habitat, or fauna, or impacts related to Aboriginal heritage, landforms, or terrestrial environmental quality.
Alternative greenfield sites	Greenfield sites were considered for the new power station site. All greenfield options were considered unsuitable due to the availability of brownfield sites which would not require clearing.	Medium-speed reciprocating gas engines or future gas generation as mentioned above	Vegetation clearing required which may result in impacts arising from loss of flora, vegetation, habitat, or fauna, or impacts related to Aboriginal heritage, landforms, or terrestrial environmental quality.

3.3.2 Measures to Reduce

Despite the efforts made through the avoidance and reduction measures in the selection phase, some GHG emissions from the Proposal are unavoidable. As such, mitigation measures are considered to reduce the emissions intensity of the Proposal. TransAlta has an existing 'Accelerating Clean" strategy that identifies a companywide pathway to reach net zero that aligns with the emission reduction and net zero target of 2050 set by the GHGMP.

Additional mitigation measures to be considered by TransAlta on its path to net zero by 2050 include:

- Adding the cost of carbon, a calculation that acknowledges climate change as a key business factor, to TransAlta's investment model.
- Carbon sequestration and storage opportunities: depending on the local geology, in some areas there is an opportunity for the capture and sequestration of carbon. However, the geology in the vicinity of the Proposal operations is not suitable for such activities.
- Less running times, and lower loads of the gas reciprocating generators when sufficient BESS is installed: As the robustness of the renewable energy system increases the addition of a storage system, the traditional firming generation supplied by the gas reciprocating engines will become less critical and may not be needed at all times, and in the quantities required initially. The gas reciprocating engines can work at relatively low partial loads without their efficiency being significantly affected. TransAlta and NiW will continue to explore how an increased penetration of renewable energy and storage can further decarbonise the network.
- Hydrogen blend fuel: Significant progress has been made in Australia to generate green hydrogen for industrial uses. One of the main applications is hydrogen blending in natural gas network to reduce average emission from burning the gas. As an example, WA state government has adopted the Renewable Hydrogen Strategy which aims to blend at least 10% renewable hydrogen in the gas pipelines and networks by 2030. While most of these projects are still in feasibility study, or small-scale demonstration phases, it is widely expected that the commitments and heavy investments by some of the largest firms will accelerate locally produced green hydrogen generation. Gas reciprocating generators can run on a hydrogen blend fuel to further reduce the emissions.
- Hydrogen fuel: While current design and material used in the gas reciprocating generators are not compatible with 100% hydrogen fuel, it is expected that hydrogen compatible designs will be available as the economy of scale and a potential carbon tax will make green hydrogen more cost competitive. The typical useful life of gas reciprocating generators ranges from 10,000 to 20,000 hours depending on the operating conditions. It is expected that as green hydrogen becomes more cost competitive, there would be 100% hydrogen compatible gas reciprocating generator options available. When an engine is due for replacement or major overhaul and green hydrogen is available as a viable fuel, an option would be to replace it with a 100% hydrogen compatible design if technically feasible.

Table 3-6 outlines the key components of this GHGMP that detail the objective based provisions to manage the Proposal's GHG emissions, including:

- the environmental objectives
- what is being monitored and why
- how and when the monitoring will be done
- how the results will be evaluated and interpreted
- the actions and timelines for the relevant management response/s.

Table 3-6:Objective based Provisions for Greenhouse Gas Emissions

EPA Factor: Greenhouse Gas Emissions				
Management Targets	**Management Actions**	**Monitoring**	**Timing/Frequency**	**Reporting**
Implement TransAlta's 'Accelerating Clean' Strategy for the SCEN network to achieve net zero emissions by 2050 Indicator: greenhouse gas emissions (tCO_2- e/year)	• TransAlta will continue to apply the decarbonisation strategy across the SCEN in order to achieve the 2050 target of net zero and meet the EPA's objectives • Further consideration of the development of wind generation at NMK to ensure its operation can align with the timeframe provided by the GHGMP where possible • Ongoing prospecting in the immediate vicinity of NMK for the identification of suitable renewable energy sites for future development on behalf of NiW as per the PPA. Future renewable energy project will support the decarbonisation targets of TransAlta. • Continued market scanning and analysis to determine the viability of storage technology to support the SCEN	Using monitoring data that will be submitted for the NGER scheme requirements to audit against interim emissions targets established in Accelerating Clean Strategy to assess progress to net zero emissions.	Annually	• Annual Compliance Report (CAR) • Reporting in accordance with NGERs scheme requirements (National Greenhouse and Energy Reporting Regulations, 2008 (Cth)) • TransAlta Annual Sustainability Report
Update the emissions baseline for the Mt Keith Power Station in line with NGERs for annual reporting and ensure that emissions at the Mount Keith Power Station Capacity Expansion Project do not exceed this baseline	• An emissions baseline for NGER reporting will be established prior to construction activities for the Proposal commencing. The baseline is established under the reformed safeguard mechanism developed by the Australian Government, Department of Climate Change, Energy, the Environment and Water (DCCEEW) as initiated under the National Greenhouse and Energy Reporting (Safeguard Mechanism) Amendment (Reforms) Rule 2023. Under the reformed approach to the Safeguard Mechanism, • TransAlta's understanding is that the Mt Keith Power Station Capacity Expansion Project will be an extension to the existing Mt Keith Power Station facility for the purposes of reporting under the Safeguard Mechanism.	Monitoring and reporting in accordance with the reforms to NGERs scheme requirements under National Greenhouse and Energy Reporting (Safeguard Mechanism) Amendment (Reforms) Rule 2023	Baseline established prior to Proposal commencement.	• Annual Compliance Report (CAR) • Reporting in accordance with NGERs scheme requirements (National Greenhouse and Energy Reporting Regulations, 2008 (Cth))
Undertake GHG emissions monitoring and reporting Indicator: greenhouse gas emissions (tCO_2- e/year)	• Monitor and report all scope 1 and scope 2 (where applicable) emissions as required by NGER and relevant conditions with a Ministerial Statement • Providing ongoing guidance to NiW on emission performance against the set baseline and provide recommendations • Contingency action where emissions are forecast to exceed limits is to offset such an exceedance with ACCUs.	Monitoring and reporting in accordance with NGERs scheme requirements (National Greenhouse and Energy Reporting Regulations, 2008 (Cth))	Ongoing / Annually	• Annual Compliance Report (CAR) • Reporting in accordance with NGERs scheme requirements (National Greenhouse and Energy Reporting Regulations, 2008 (Cth)) • Report to the EPA CEO as per conditions of the Ministerial Statement
Achieve emission reduction targets (**Table 3-4**) Indicator: greenhouse gas emissions (tCO_2- e/year)	Implement measures to minimise detailed in Section 3.3 to progress the SCEN towards emissions reduction targets on a five yearly trajectory. By 2050, the emissions will be reduced to as low as possible with avoidance and mitigation measures and the residual emissions will be offset. Explore options to reduce scope 3 emissions, where practicable, throughout the life of the proposal through regular reviews and in line with 5-yearly reviews of the management plan, with a view to improving performance.	The proposal's emissions will be monitored against this GHGMP to ensure the targets are met.	Every five years	• Five-yearly report to the EPA

3.4 Mitigation Measures adopted to avoid, reduce of offset Scope 2 emissions

There are no scope 2 emissions that will result from this proposal

3.5 Mitigation Measures adopted to reduce Scope 3 emissions.

TransAlta will work closely with BHP Nickel West minimise the amount of Scope 3 emissions that result from the development of the new power generation.

3.6 Other statutory decision-making processes which require reduction in GHG emissions

The management of GHG emissions is regulated by a variety of both State and Federal legislation. This GHGMP considers the following applicable legislation outlined in the below Error! Reference source not found.~~Table 3-7~~.

Table 3-7: Relevant legislation and regulatory framework for managing GHG emissions

Legislation/Regulatory Framework	Relevance
Western Australian Climate Policy 2020 (WA)	Demonstrates the State Government's commitment to our net zero aspiration and provides our community with the tools to enhance resilience and for business to thrive in a low-carbon future.
***Environmental Protection Act 1986* (WA) – EP Act**	Outlines Western Australia's process for environmental impact assessment and ministerial approval.
***National Greenhouse and Energy Reporting Act 2007* (Commonwealth (Cth)) – NGER Act**	Details the National reporting process for Australian Corporations pertaining to GHG emissions, GHG projects, and energy production and consumption.
National Greenhouse and Energy Reporting (Safeguard Mechanism) Rule 2015 (Commonwealth)	A Safeguard mechanism through which facilities emitting more than 100,000 tCO_2-e per year of Scope 1 emissions must administer and comply with. Significant reforms to the Safeguard Mechanism took effect on 1 July 2023. The reform includes a baseline decline rate of 4.9% per annum for Safeguard Mechanism facilities through to 2030, and 3.285% for FY31 onwards.
National Greenhouse and Energy Reporting (Measurement) Determination 2008 (Commonwealth)	Provides a framework for the methods, standards and criteria that should be used when estimating GHG emissions, and energy production and consumption.
Environmental Factor Guideline (Greenhouse Gas Emissions) (Environmental Protection Authority, 2020) (WA)	The EPA's guideline for consideration of GHG emissions during the process of environmental impact assessment.
Greenhouse Gas Emissions Policy for Major Projects	Policy designed to guide Western Australian Government decision making for major projects that are assessed by the Environmental Protection Authority.

3.6.1 Safeguard Mechanism

Relevant existing Safeguard Mechanism Facilities managed by Tec Desert Pty Ltd are detailed in **Table 3-8** below.

Table 3-8:Relevant Safeguard Mechanism Facilities

Facility Name	Responsible emitter	Production Variable
Mount Keith Power Station	TEC DESERT PTY LTD	Megawatt hours of electricity generation default emissions intensity of 0.619 tCO2-e applicable
Leinster Power Station	TEC DESERT PTY LTD	Megawatt hours of electricity generation default emissions intensity of 0.566 tCO2-e applicable

As required by the Safeguard Mechanism Reform, enforced from 1 July 2023, both facilities will transition from a calculated baseline to a production-adjusted baseline during the FY23 reporting period. The calculation of production-adjusted baselines takes into consideration the following components:

1. **Safeguard Mechanism Decline Rate:** a decline rate of 4.9% per annum will apply to safeguard facilities, other than those identified as Trade Exposed Baseline Adjusted facilities, between FY24 and FY30 inclusive. A decline rate of 3.285% per annum will apply from FY31 onwards. The facilities relevant to this Proposal are not likely to be considered as Trade Exposed Baseline Adjusted facilities. Decline rates are subject to periodic review by Government.
2. **Emissions Intensity:** The Safeguard Mechanism is transitioning all facilities towards using the 'default emissions intensity' or 'industry best practice emissions intensity' on a 100% basis from 2030, when calculating baselines. The relative proportion from FY2024 to FY2030 will vary based on the Safeguard Mechanism:
    a. Default Emissions Intensity: Representative of the Government assessed industry average for the production of specific commodities, including iron ore, electricity and net tonne kilometres of iron ore transported by rail.
    b. Site-Specific Emissions Intensity: Historic emissions intensity for an NGER facility between FY2018 to FY2022, selecting the mid-point.
    c. Industry Best Practice Emissions Intensity: Continues to be developed by Government, aims to consider international best practice, aligning to local conditions.
3. **Actual Production:** The NGER Act requires reporting of production data associated with emissions intensities, in addition to existing emissions and energy reporting to the CER.

Production-adjusted baselines are determined by the CER once emissions and production data has been reported through the NGER Act, which are due 31 October preceding a financial compliance year. Production-adjusted baselines compensate for the potential for actual production to vary, ensuring that emissions limits remain relative to actual production, limiting issues of discrepancy between estimated production and emissions, and those which occur in practice. As a result, this GHGMP provides an estimate of the applicable baseline, which will be determined annually by the CER and operate as a net GHG emissions limit for that year.

The NGER Act and Safeguard Mechanism now provide a contemporary, robust, transparent and enforceable legislative regime to deliver GHG emissions reductions commensurate to Australia's international obligations and when applied to the proposal, will meet the EPA's greenhouse gas emission reduction objective.

3.7 Consistency with other GHG reduction tools

TransAlta is a global leader in clean electricity and is actively decarbonising its network in alignment with the goal of globally achieving net zero emissions by 2045. TransAlta announced its strategy to accelerate its transition away from coal to gas and renewables generation in 2017, and by 2021 it had reduced its global GHG emissions by 61% from 2005 levels. TransAlta's goal for 2026 is a 75% reduction in emissions from 2015 levels. This is in line with BHP, which has set a medium-term target to reduce operational GHG emissions by at least 30% from FY2020 levels by FY2030 and aims to achieve net zero operational GHG emissions by 2050.

TransAlta has prepared a tailored energy plan for the SCEN network that identifies suitable renewable energy projects and initiatives that provide a carbon reduction pathway out to 2030. This plan will be continually adapted to provide a suitable pathway to 2050 that is aligned with TransAlta's and NiW's commitments to net zero and TransAlta's obligations made in this Proposal. TransAlta has already begun implementing this plan with the planning and construction of the following assets:

- **Renewable Generation**: 38MWdcp of solar at Mt Keith and Leinster as part of the Northern Goldfields Solar Project (now operating);
- **Energy Storage**: 10.76MW Battery Energy Storage System (BESS) under construction at Leinster as part of the Northern Goldfields Solar Project (now operating); and
- **Firming Generation**: Without grid support, any renewable generation in an off-grid environment must be supported by firming generation to support intermittent interruptions in renewables until storage technology is feasible and proven to be able to cover any such shortfall. This generation is proposed to be provided by highly efficient gas-fired reciprocating engines (this proposal) to enable the phasing out and displacement of legacy thermal generation assets to meet loads with lower emissions.

3.8 Offsets

TransAlta will implement the measures of the EPA's mitigation hierarchy (avoid, mitigate, rehabilitate to reduce GHG emissions on the broader SCEN network. Where TransAlta is not able to achieve the **Table 3-4** emission reduction targets, the residual GHG emissions (scope 1) will need to be offset.

The focus of TransAlta will be on reducing scope 1 emissions as much as possible through the introduction of renewable energy projects. Where NiW's forecast load growth projects do not occur or are delayed resulting in a sufficient reduction in scope 1 emissions to meet the **Table 3-4** emission reduction targets, TransAlta will engage with the EPA to seek an amendment to the GHGMP or apply national or international credible offset units to offset the difference in emissions. In determining the most suitable offsets, TransAlta will apply the integrity principles of the International Carbon Reduction and Offset Alliance (ICROA) to source and use credible offset units and adopt the Commonwealth *Carbon Credits (Carbon Farming Initiative) Act 2011*.

In addition to this, TransAlta has undertaken a review of current offsets and will only use credible offsets which have been validated, verified, or registered and are likely to be reasonably practicable and available at the time of proposed future surrender.

These offsets may include but are not limited to:

- Verified Emission Reductions issued under the Gold Standard program
- Verified Carbon Units issued under the Verified Carbon Standard program; or Other offset units, that the Minister has notified the proponent in writing of, meet integrity principles and are based on clear, enforceable, and accountable methods
- Renewable Energy Certificates
- Clean Development Mechanism
- Climate Action Reserve
- Gold Standard
- Joint Implementation
- Verified Carbon Standard
- American Carbon Registry
- Canadian Greenhouse Gas Offset Credit System
- Emission Reduction Fund of the Australian Government

- UK Woodland Carbon Code

It should also be noted that if the annual emissions were to be in excess of the benchmark emissions baseline under the Safeguard Mechanism, TransAlta will be required to procure and surrender ACCU's or other offsets to meet its obligations.

3.9 Projects operating beyond 2050

The Proposal has a lifespan of 23 years and is expected to continue past 2050, however by that time Net Zero emissions will have been reached.

4 Adaptive Management, continuous improvement, and review of the GHG EMP

4.1 Adaptive Management

TransAlta is committed to ensuring the management approach for GHG emissions is adaptive and responsive to changes in the scientific understanding and advancements in best management practices, as well as changes occurring to the natural environments (e.g., future climatic changes). Taking this adaptive approach enables adjustments to the mitigation measures and monitoring protocols to continue to meet the Proposal's management objective over the long-term.

Prompts that will initiate an adaptation of the management measures outlined in this GHGMP include:

- Periodic reviews and evaluation of monitoring data or methodology: Aimed to determine whether site specific monitoring program results indicate that management targets are not being achieved.
- Increased understanding of the emissions estimate: If additional information about the specific values for GHG emissions are obtained that would better inform management approaches.
- External changes during the life of the Proposal (such as project design changes, technical advances or innovation): The relevance and effectiveness of management measures would be considered and reviewed and/or revised following any significant changes to the Proposal.

Additionally, TransAlta's corporate team are in the process of developing a detailed model for calculating a project's scope 3 emissions. Until this is available and confirmed as applicable to Australia's local requirements for calculating scope 3 emissions, the NGA factor will be used. Once this model, with greater rigour on calculating specific upstream and downstream emissions, is ready, revised updates to the GHGMP will include the model's information on the Proposal's scope 3 emissions and provide greater clarity on proposed reductions targets for scope emissions

4.2 Review & Continuous Improvement

The GHGMP will be reviewed and updated prior to commencement of the Proposal as the processing technology is finalised, and then every five years, or as required by an approval condition, throughout the operational phases of the Proposal, unless a review is triggered by the above circumstances of adaptive management. To achieve Net Zero emissions by 2050, TransAlta will ensure that the best available technology is incorporated where possible. Revisions will be submitted to the EPA for approval of the updates as required under a Ministerial Statement.

TransAlta will update the GHGMP to include the publication of a summary of approved GHGMP at commencement of proposals and a summary of five yearly progress of achievement of GHG conditions and implementation of the GHGMP as per the EPA's Greenhouse Gas Emissions factor Guidelines (2023).

5 Reporting

5.1 Monitoring and Reporting Against the GHG EMP

Using the GHG emission data collected for NGER reporting, TransAlta will produce a monitoring report to be provided to the EPA every five years that will track the performance of the Proposal against this GHGMP. The report will comment on whether the Proposal's scope 1 emissions have been reduced in accordance with the trajectory outlined in **Table 3-1**. The emissions (tCO_2-e/year) will be used as an indicator for monitoring and evaluation will be in the context of monitoring criteria detailed in the EPA's *Instructions on How to Prepare EP Act Part IV Environmental Management Plans* (EPA 2021).

Scope 3 emissions will also be evaluated in this monitoring report, The scope 3 tCO_2-e/year will be calculated with actual consumption data (as opposed to predicted consumption as used in this iteration of the GHGMP) and compared to the expected scope 3 emissions. In future revisions of this GHGMP, TransAlta intends to implement measures to address and reduce scope 3 emissions in addition to scope 1 emissions. With the revised detail, TransAlta will subsequently increase the detail of tracking scope 3 emissions in the five yearly monitoring report.

If the scope 1 reductions have not been met at the five-year monitoring report period, TransAlta will provide justification or will otherwise make available evidence that the exceedance has been offset and will subsequently present a pathway for the next five-year period to achieve the reductions.

5.2 Emissions Safeguard Mechanism

Under the NGER Act, facilities with scope 1 emissions of more than 100,000 tCO_{2-e}/year must report their emissions under the safeguard mechanism. This mechanism was developed as a part of the Emissions Reduction Fund (ERF) that incentivises companies to avoid increases in their annual emissions above a business-as-usual (BAU) level (or baseline).

The Australian Government has undertaken a process to reform the safeguard mechanism through the Department of Climate Change, Energy, the Environment and Water (DCCEEW) as initiated under the National Greenhouse and Energy Reporting (Safeguard Mechanism) Amendment (Reforms) Rule 2023. The reforms to the Safeguard Mechanism came into force from 1 July 2023 following public consultation.

In January 2023 TransAlta submitted an application to apply for a 3-year multi-year monitoring period covering FY2022 to FY2024 for the existing Mt Keith Power Station facility. The application was developed as emissions from the facility in FY2022 exceeded the baseline, but with the completion of the Northern Goldfields Solar Project in FY2023, Mt Keith's emissions are expected to be materially below the baseline.

Emission reductions post 2024 for the Mt Keith Power Station and Leinster Power Station facilities will be subject to the baseline decline rate as prescribed in the NGER (Safeguard Mechanism) Rule 2015 (s32). The Safeguard Mechanism will therefore be the legislative framework utilised to drive the deep and substantial emissions reduction expected by the EPA through the implementation of this GHGMP. TransAlta's understanding is that the Mt Keith Power Station Capacity Expansion Project will be an extension to the existing Mt Keith Power Station facility for the purposes of reporting under the Safeguard Mechanism. As outlined in section 3.8 Offsets~~,~~ if the renewable and upgrade projects are not sufficient to meet the revised baselines, TransAlta will procure and surrender ACCU's or other offsets to meet its obligations. Under the National Greenhouse and Energy Reporting (Safeguard Mechanism) Amendment (Reforms) Rule 2023, TransAlta, as a Responsible Emitter, will report emissions to the Clean Energy Regulator each year to track progress against the baseline. The GHGMP will be revised as required.

In addition to the above annual reporting, GHG emissions and progress against the implementation of this plan will be provided in the annual report relating to the Mt Keith Power Station Capacity Expansion Project and be made available to the public as required (e.g., in accordance with the EPA's Post Assessment Guideline for Making Information Publicly Available (Page 4)).

5.3 National Greenhouse and Energy Reporting Scheme

The National Greenhouse and Energy Reporting Act, 2007 (Cth) (NGER Act) has an established national framework through the National Greenhouse and Energy Reporting (NGER) scheme, through which GHG emissions, energy production and energy consumption should be reported.

TransAlta will be required to comply with the NGER Act as the Proposal emissions are expected to exceed the reporting threshold of 25,000 tCO_{2-e} per annum. To ensure compliance, all scope 1 and scope 2 GHG emissions will be required to be reported annually. An annual, publicly available report will be produced and submitted to the Clean Energy Regulator (by 1 November) that details the GHG emissions generated by the Mount Keith Power Station Capacity Expansion Project.

6 Stakeholder consultation

TransAlta is committed to effective engagement and meaningful consultation through the development and implementation of the GHGMP.

Stakeholder engagement on the Proposal is comprehensively captured within the Mt Keith Power Station Capacity Expansion Project Supporting Document. As part of the development of the GHGMP, TransAlta has engaged with stakeholders in a clear and timely manner on its GHG decarbonisation objectives and pathway. Stakeholder engagement on how GHG emissions will be managed in line with the EPA's expectations and to achieve net zero GHG emissions by 2050 has been carried out with key regulatory authorities and potentially affected parties alongside discussions on the Proposal.

The format of engagement has included virtual and in person meetings, correspondence and surveys undertaken with the native title holders. The focus of engagement is on how TransAlta proposes to manage GHG emissions from the Proposal including mitigation measures that will be implemented over the life proposal to reduce emissions to ensure net zero GHG emissions is achieved by 2050.

TransAlta will undertake ongoing consultation throughout the life of the Proposal with various stakeholders as required.

A summary of the stakeholder engagement and consultation undertaken to date on the GHGMP is provided in **Table 6-1** below. Consultation with the key stakeholders listed is ongoing and will be undertaken on either a regular or ad-hoc basis, depending on the nature of the relationship and the progression of the GHGMP.

Table 6-1: Stakeholder consultation summary

Stakeholder	Date	Topic/Concerns raised	Proponent response/outcome
BHP Nickel West	29/10/2021	NiW provided direction to TransAlta to pursue development of the Proposal to ensure generation is available to meet forecast load growth.	TransAlta commenced scoping requirements for the GHGMP.
Tjiwarl Aboriginal Corporation RNTBC	9/02/2022	TransAlta provided input into NiW's relationship meeting with the Tjiwarl Aboriginal Corporation RNTBC and presented the Proposal and GHGMP requirements to the Tjiwarl Aboriginal Corporation RNTBC for consultation and feedback.	Provided to the Tjiwarl Aboriginal Corporation RNTBC for information; no issues raised.
Tjiwarl Aboriginal Corporation RNTBC	30/03/2022	Formal engagement and notification provided to the Tjiwarl Aboriginal Corporation RNTBC through NiW, on the basis that the Proposal constitutes an "Infrastructure Interest" under NiW's Indigenous Land Use Agreement and Comprehensive Agreement with the Tjiwarl Aboriginal Corporation RNTBC.	40 business days' advance notice provided by NiW to Tjiwarl Aboriginal Corporation RNTBC in relation to the Proposal.

Stakeholder	Date	Topic/Concerns raised	Proponent response/outcome
Mt Keith Pastoral Sublessee	30/03/2022	Courtesy notification of geotechnical drilling planned within the Mt Keith Pastoral Lease, noting that the area is not part of the sublease.	No issues raised; site visit has been organised with the Mt Keith sublessee.
APA	1/04/2022	Meeting held to discuss requirements for the design of the Proposal around the Mt Keith Lateral Gas Pipeline and future gas requirements	APA requirements incorporated into project design.
Energy Policy WA	29/04/2022	Meeting held to inform Energy Policy WA of the Proposal and GHGMP to seek feedback on the environmental approvals required.	Engagement with the EPA and DWER recommended to clarify scope of GHGMP.
EPA/DWER	4/05/2022	Meeting held to discuss the requirements for a Part IV Referral, GHGMP and Part V	Ongoing engagement with the EPA recommended.
EPA	15/06/2022	Correspondence provided on current and future policy regarding how GHG emissions are assessed under Part IV and the requirements for a GHGMP under the current guidance.	Further direction provided by EPA.
DWER	12/08/2022	Meeting to discuss Part V approvals pathway, required information and how GHG emissions from the Proposal will be assessed.	Confirmation that a Works Approval is required and recommend further engagement with the EPA.
EPA	7/09/2022	Meeting with EPA Deputy Chair who confirmed a Part IV Referral would be required for the Proposal including a GHGMP and its scope.	Confirmation a Part IV Referral is required for the Proposal. For a complete understanding of GHG emissions, the GHGMP should be applied to all generation and loads on the SCEN rather than just the Proposal.
Tjiwarl Aboriginal Corporation	20/10/2022	TransAlta provided input into NiW's relationship meeting with the Tjiwarl Aboriginal Corporation RNTBC and progress of development for the Proposal and GHGMP.	Provided for information to the Tjiwarl Aboriginal Corporation RNTBC; no issues raised.
DMIRS	15/11/2022	Submission of miscellaneous licence.	Application made
APA	11/01/2023	Update on progress of the Proposal and timeframe for gas connection	For information
EPA	6/04/2023	NiW meeting with EPA Chair and DWER representatives to discuss the Proposal, scope and submission timing	Further direction provided by EPA
EPA	25/05/2023	Pre-referral meeting to introduce and discuss the Part IV referral documentation.	Feedback provided by EPA for incorporation into the documentation.

Stakeholder	Date	Topic/Concerns raised	Proponent response/outcome
Tjiwarl Aboriginal Corporation RNTBC	July 2023	Formal provision of the referral documentation, including the opportunity to review and provide feedback as required under NiW's Indigenous Land Use Agreement and Comprehensive Agreement with the Tjiwarl Aboriginal Corporation RNTBC.	20 business days' advance notice provided by NiW to Tjiwarl Aboriginal Corporation RNTBC in relation to the Proposal.
Tjiwarl Aboriginal Corporation RNTBC	19/072023	Formal presentation on the Proposal to Tjiwarl Aboriginal Corporation RNTBC.	Proposal update to the Tjiwarl Aboriginal Corporation RNTBC; no issues raised.

7 Changes to GHG EMP

As this is the first iteration of the Proposal GHGMP, there are no changes to be noted.

8 References

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Appendices

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Appendix A - Greenhouse Emissions Estimation

Appendix B Greenhouse Gas Emissions Map

CREATING COMMUNITIES

Communities are fundamental. Whether around the corner or across the globe, they provide a foundation, a sense of belonging. That's why at Stantec, we always **design with community in mind**.

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