# APPENDIX F Greenhouse Gas Management Plan

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## Authorisation and Revision

| REVISION | DATE | DESCRIPTION OF REVISION | PREPARED | CHECKED | APPROVED |
|---|---|---|---|---|---|
| 0 | 2/09/2022 | Original issue | L. Whitley | M. Bushell | M. Hochen |
| 1 | 28/07/2024 | Updated to meet WA Environmental Factor Guideline – GHG Emissions | L. Cherrie | External peer review | M. Bushell |

## REVISION HISTORY TRACKING RECORD

| No. | DATE | AUTHOR | CHECKED | AMENDMENT |
|---|---|---|---|---|
| 1 | 28/07/2024 | L. Cherrie | 3rd party best practice review | Restructured and amended to align with the WA Environmental Factor Guideline – GHG Emissions.<br>Additional mitigations added in consultation with Telfer area owners |
| | | | | |
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| | | | | |

# 1 EXECUTIVE SUMMARY

| | |
|---|---|
| Proposal name | Telfer – Havieron Gold Mining Project |
| Proponent name | Newmont (NOL) Pty Limited (ABN: 20 005 683 625) |
| Proposal description and scope | The Telfer – Havieron Gold Mining proposal is for the expansion of the Telfer Gold Mine to include the Havieron underground mine. The proposal is within a development envelope encompassing both the Telfer - Havieron operations and inclusive of a haul road for trucking of ore from Havieron to Telfer for processing, waste rock landforms, evaporation ponds and expanded ground water abstraction, for a. The proposal is located about 400 km south-east of Port Hedland in the Great Sandy Desert region of Western Australia, with the Telfer Mine site located 55 km to the west of the Havieron Gold Mine.<br><br>Current approval for mining at the Telfer Gold Mine comprises the mining and processing of 400 million tonnes of gold ore at a rate of up to 23 million tonnes per annum, and the transport of copper concentrate to Port Hedland by road. It also includes a power supply of up to 100 megawatts to the Telfer Gold Mine using a 440 km long power supply and infrastructure corridor from Port Hedland, which will be transmitted for use at Havieron. The combined total production is 32 million tonnes of ore.<br><br>After the cessation of mining at Telfer (currently slated for 2027) processing of Havieron ore will continue on a campaign basis at a rate of 6 million tonnes per year. |
| Purpose of the GHG EMP | The purpose of the Greenhouse Gas Management Plan (GHG MP) is to:<br>• Outline the actions for adapting to climate change and transitioning towards the goal of net zero by 2050 as set by the Western Australian Climate Policy<br>• Demonstrate commitment towards meeting the EPA objective to *"Minimise the risk of environmental harm associated with climate change by reducing greenhouse gas emissions as far as is practicable*" and |

| | |
|---|---|
| | broader protection of key ecological features such as water resources, flora and fauna, marine environmental quality, and social surroundings.<br>• Meet the requirements of Ministerial Statement (MS) 605 Condition 6-1, and MS 606 condition 7-1<br>• Adhere to the structure and minimum requirements specified in the EPA Environmental Factor Guideline - Greenhouse Gas Emissions (2023), and associated template. |
| Emissions estimates | The Telfer – Havieron combined total Scope 1 emissions for Life of Mine to 2035 are estimated to be up to 3,261,251 t CO2-e for all sources, with annual average emissions of 250,865 tCO2-e.<br>There are 0 t CO2-e Scope 2 emissions due to onsite generation of electricity.<br>Annual average Scope 3 emissions are estimated at up to 185,000 tCO2-e.<br>It should be noted that in Revision 2 of this GHG EMP emissions are to be calculated to 2045 to encompass the decommissioning and rehabilitation phase. |
| Trajectory of emissions reductions | The trajectory of combined GHG emissions for the Telfer – Havieron Project will decrease commensurate with the depletion of mineral resource, with a step change reduction in 2027 after cessation of mining at Telfer (refer Figure 4). The life of the project ends in 2035 with post-closure activity due to cease in 2045.<br>Trajectory is currently based on the production-based Safeguard Mechanism as follows:<br>(1) 2,773,509 tCO2-e for the period between 1 July 2021 and 30 June 2025<br>(2) 2,462,460 tCO2-e for the period between 1 July 2025 and 30 June 2030<br>(3) 1,864,754 tCO2-e for the period between 1 July 2030 and 30 June 2035<br>(4) 1,316,296 tCO2-e for the period between 1 July 2035 and 30 June 2040<br>(5) 626,808 tCO2-e for the period between 1 July 2040 and 30 June 2045<br>(6) 219,383 tCO2-e for the period between 1 July 2045 and 30 June 2050 |

| | |
|---|---|
| | (7) zero (0) tCO2-e per annum for every five (5) year period from 1 July 2050 onwards. |
| Other statutory decision-making processes that require reduction in GHG emissions | Safeguard Mechanism under the *National Greenhouse and Energy Reporting (NGER) Act 2007* and associated NGER (Safeguard mechanism) Amendment (Production Variables Update) Rules 2024. |
| Key components in the GHG EMP | Sources and estimates for Scope 1 emissions and the available best practice mitigation measures adopted to avoid, reduce or offset Scope 1 emissions (noting the existing nature of the Telfer facility).<br>Estimates of Scope 3 emissions and the measures adopted to promote avoidance and reduction by service providers, through procurement, and in upstream processing.<br>Adaptive management framework for continual improvement. |
| GHG EMP reviews and reporting | Review of this GHG EMP will occur 5-yearly in accordance with the Paris Agreement and Clean Energy Regulator requirements.<br>Revision will be made in accordance with the instructions in 'How to prepare Environmental Protection Act 1986 Part IV Environmental Management Plans Instructions' (EPA, October 2021) |
| Proposed construction date | Construction and mine development at Havieron commencing October 2025. |
| GHG EMP required pre-construction | Yes – Project is a Significant Amendment to an existing approved Telfer Gold Mine. |
| Proposed project end of life / decommissioning date | Life of Mine is 2035, noting the cessation of Telfer mining scheduled in 2027 and the continued operation of the processing plant for Havieron ore at a 25% capacity (approximately 6 million tonnes per year). Total project life, including decommissioning and rehabilitation phase, is up to 2045. |

# 2 CONTEXT, SCOPE AND PURPOSE

## 2.1 PROPONENT, PROPOSAL DESCRIPTION AND SCOPE

### 2.1.1 Proponent

Newcrest Mining Limited
(ABN: 20 005 683 625)
C/O Newmont Corporation
Level 5, 500 Hay Street
Subiaco, Western Australia, 6007

### 2.1.2 Proposal description

The Telfer – Havieron Gold Mining proposal is for the expansion of the Telfer Gold Mine to include the Havieron underground mine, within a development envelope encompassing both operations. It includes a haul road for trucking of ore from Havieron to Telfer for processing, new waste rock landforms, evaporation ponds and expanded ground water abstraction at Havieron, for a combined total of 32 million tonnes of ore production.

The proposal is located in the Pilbara Great Sandy Desert Region of WA as shown in Figure 1. Telfer is located 400 km south-east of Port Hedland and Havieron located a further 45 km to the east. Havieron is a Significant Amendment to the existing approved Telfer operation and will be combined under a single contemporary MS once approved.


**Figure 1 - Location of the Telfer - Havieron Project**

***Telfer***

Telfer commenced operation in 1975 and, after a period of care and maintenance, was approved to recommence operating by Newcrest Mining Limited in 2002 under Ministerial Statements (MS) 605, MS 650 (issued to vary construction conditions for 605) and MS 606. These approvals provided for recommencement and expansion of mining at the Telfer Gold Mine to include the mining and processing of 400 million tonnes of gold ore at a rate of up to 23 million tonnes per annum, and the transport of copper concentrate to Port Hedland by road. It also includes a power supply of up to 100 megawatts to the Telfer Gold Mine using a 440 km long power supply and infrastructure corridor from Port Hedland.

The Telfer Gold Mine is approved for the open pit and underground mining of gold-copper ore, processing of 400 million tonnes of gold ore at a rate of up to 23 million tonnes per annum, and transport of copper concentrate to Port Hedland by road.

Telfer also includes a 160-megawatt (MW) gas-fired power station supplied by natural gas piped from Port Hedland along a 440 km power supply and infrastructure corridor, as well as associated infrastructure such as waste rock landforms, tailings storage facilities, stockpiles, laydown areas, access roads, accommodation village and borefields.

***Havieron***

The Havieron Underground Mine Project is a greenfield gold-copper deposit that is being developed by Newcrest under a joint venture agreement with Greatland Pty Ltd (Greatland). The development of the Havieron Project to date has involved exploration and early works activities (Stage 1) to establish the underground decline towards the orebody, and the surface infrastructure necessary to manage mine waters, waste rock, and ancillary services. With further approval Havieron will progress development of the mine including:

- Clearing of 630 ha of new disturbance
- Development of an underground mine for extraction of 3 million tonnes per year of ore
- Construction and operation of a 50 km infrastructure corridor from Havieron to Telfer Gold Mine for the transport of ore, water, electricity and site access
- Abstraction of 2 GL per year of groundwater through a production borefield and mine dewatering
- Establishment of a Waste Rock Landform (WRL) for approximately 1,500,000 $m^3$ of material from the underground mine (additional to a smaller existing WRL)
- Expansion of associated infrastructure including batch plant, paste backfill production, maintenance and operational facilities, and accommodation.

It should be noted that after the cessation of mining at Telfer (currently slated for 2027) processing of Havieron ore will continue on a campaign basis at a rate of 6 million tonnes per year.

### 2.1.3 Scope of the GHG EMP

The scope of this GHG EMP is the life of the combined project and those activities giving rise to GHG emissions as follows:

- Continued mining of gold – copper ore at the Telfer Gold Mine through to 2027 due to scheduled depletion of the Telfer resource
- Continued processing of ore at Telfer utilising existing and, where necessary, expanded plant and equipment (noting the progressively replacement of Telfer ore with Havieron ore and processing at 25% capacity until 2035)
- Clearing of vegetation for development
- Construction and operation of an underground gold mine at Havieron and the transport of ore to Telfer for processing
- Ancillary infrastructure
- Decommissioning and rehabilitation at the cessation of mining and processing.

This GHG EMP does not include scope 2 emissions because of onsite power generation from supplied natural gas that is accounted for under scope 1 emissions.

## 2.2 PURPOSE OF GHG EMP

Newcrest acknowledges that the GHG emissions associated with the Telfer – Havieron combined project will increase GHG emissions. High levels of GHG in the atmosphere have been well documented to have led to the acceleration of climate change. Whilst total Scope 1 emissions from the significant amendment will only contribute 0.35% to Western Australia's total emissions and 0.06% of Australia's emissions (based on FY2019 totals), it is incumbent upon NOL to ensure best practice is applied in the context of the existing operation.

The purpose of this GHG EMP is to outline the actions necessary to:

- Adapt and transition towards net zero GHG emission by 2050 as per the Western Australian Climate Policy
- Align with the EPA objective of *"reducing net greenhouse gas emissions in order to minimise the risk of environmental harm associated with climate change"* (EPA, 2020).
- Monitor and report upon emissions reductions from baseline in compliance with the stated Safeguard Mechanism and NGER obligations
- Maintain our social licence to operate.

To achieve the above objectives this GHG EMP includes management actions to:

- Avoid or reduce direct emissions over the life of the project, and only offset where emissions-reduction measures are not possible or not fully effective
- Identify and pursue innovation and best practices in the mining and metals industry to transition to a low carbon future
- Adapt to threats and opportunities for emissions reduction through the life of the project
- Work with suppliers and customers to better understand Scope 3 emissions and ensure efficiency is central to the procurement of goods and services
- Report GHG emissions, including performance against GHG intensity targets and emissions reduction trajectory for scope 1 emissions.

The GHG EMP has been prepared considering:

- WA Climate Policy commitments to transition to net zero emissions by 2050
- The EPA's Greenhouse Gas Environmental Factor Guideline (EPA, 2023)
- The National Greenhouse and Energy Reporting Act 2007 (NGER Act).

This combined Telfer – Havieron GHG EMP supersedes the Telfer Greenhouse Gas Management Plan developed under MS606 and currently implemented by Newcrest.

# 3 GHG EMP COMPONENTS

## 3.1 EMISSIONS ESTIMATES

### 3.1.1 GHG emitted and their global warming potential

GHG emissions relevant to the Telfer – Havieron proposal and their global warming potential are shown in Table 1. Emissions are predominantly derived from the combustion of fuel in the mining fleet, and the consumption of natural gas in the Telfer power plant. An inventory of sources is provided in 3.1.2 and combines with land clearance as an additional contribution to emission through the loss of carbon sequestration, to provide an overall assessment.

Emissions factors are derived from Schedule 1 of the *NGER (Measurement) Amendment (2023 Update No. 2) Determination 2023*) and presented as $CO_2$ equivalence in accordance with the Global Warming Potential (GWP) assigned by the Intergovernmental Panel on Climate Change (IPCC).

**Table 1 - GHG emission factors for fuel combustion**

| FUEL | ENERGY CONTENT (GJ/kL) | EMISSION FACTOR (kgCO2-e/GJ) | | | |
|---|---|---|---|---|---|
| | | CARBON DIOXIDE ($CO_2$) | METHANE ($CH_4$) | NITROUS OXIDE ($N_2O$) | TOTAL |
| **GLOBAL WARMING POTENTIAL** | | 1 | 28 | 265 | |
| Natural gas (piped) | 39.3 GJ/$m^3$ | 51.4 | 0.1 | 0.03 | - |
| Diesel oil (non-transport) | 38.6 GJ/kL | 69.9 | 0.1 | 0.2 | 70.2 |

No additional sources of GHG are anticipated for the life of the project and, based on the measures adopted and the commitment to continuous improvement, the trajectory of emissions will only decrease over time.

### 3.1.2 Inventory and methodology for emissions estimates

National and international GHG reporting standards define a set of distinct classes (scopes) of GHG emissions that delineate sources and associated responsibilities:

**Scope 1** GHG emissions are the emissions released to the atmosphere as a direct result of an activity, or a series of activities at a facility level.

**Scope 2** GHG emissions are indirect emissions from consumption of an energy product (electricity, heat or steam) from a third-party supplier. These are not reportable for the project because no purchase power is utilised due to the onsite power station, with natural gas being reported as Scope 1.

**Scope 3** emissions are indirect GHG emissions other than Scope 2 emissions that are generated in the wider community, which occur because of the activities of a facility, but from sources not owned or controlled by that facility's business (CER, 2021).

***Scope 1 methodology and inventory***

Scope 1 emission from fuel consumption have been prepared using methods and emissions factors from the National Greenhouse and Energy Reporting (Measurement) Determination 2008 (NGER Determination), as applicable to 2020-21 financial year (FY2021). Emissions have been calculated using Method 1 of the NGER Determination, which specifies the use of designated emission factors in the estimation of emissions. Carbon sequestration loss due to biomass disturbance has been calculated using the Full Carbon Accounting Model (FullCAM).

The Scope 1 GHG emissions associated with the combined Telfer - Havieron Project include:

- Emissions from fuel consumption:
  - Primary Power Station (PPS) comprising three GE LM6000 gas-fired turbines
  - Secondary Power Station (SPS) comprising eight standby diesel-fired generators
  - Hybrid mobile equipment diesel use
  - Diesel fuel use in non-transport heavy vehicles (i.e., mobile equipment including haul trucks, loaders, excavators)
  - Diesel fuel use in non-transport light vehicles (cars, utes, small trucks, gensets)
  - Diesel fuel use for ore transport between Havieron Project and Telfer Project.
- Emissions associated with loss of sequestration capacity from clearing of vegetation to facilitate the Havieron Project.

The GHG emissions excluded from this assessment include:

- Emissions associated with construction and post-closure monitoring and rehabilitation (noting that these will be calculated for Revision 2 of this GHG EMP, refer 7.1)
- Emissions associated with the disposal of waste and wastewater, noting that these are limited to diesel usage in pumping infrastructure and considered to be negligible and quantifiable forecast pumping volumes were not available at the time of assessment
- Emissions associated with land clearing for the Telfer Project because these activities have already occurred and been included in NGER annual reports and Native Vegetation Clearance Permit reports
- Use of explosives for mining operations.

***Vegetation clearing methodology***

Emissions associated with clearing for the Havieron Project have been calculated using the FullCAM guidelines produced by the Department of Industry, Science, Energy and Resources (DISER, 2020) and methodology outlined in the Carbon Credits (Carbon Farming Initiative- Avoided

Clearing of Native Regrowth) Methodology Determination 2015 (CER, 2018). The process involves determining the carbon mass for an area and converting it to carbon dioxide emissions when the land is cleared.

The carbon mass (tonnes of carbon per hectare) is calculated using the project location (latitude/longitude coordinates) and long-term average rainfall – the latter calculated from the Australian Government's National Map (DISER, 2020). The maximum carbon mass of trees per hectare and the associated forest debris carbon mass per hectare have been used in the calculations. Other baseline settings used in the FullCAM calculations were set up in accordance with the FullCAM Guidelines (DISER, 2020). Emissions have been calculated assuming all vegetation will be completely lost upon land clearing and converted to carbon dioxide emissions in the first three years of the Havieron Project. No rehabilitation has been accounted for in the GHG calculations, however rehabilitation will commence in once construction of the infrastructure corridor is completed.

### 3.1.3 Scope 1 emissions estimates

Estimated Scope 1 emissions are based on 2021 forecast mining and processing throughput, and provided as follows:

- Telfer – data shown in Table 1 and graphically in Figure 2
- Havieron – data shown in Table 2 and graphically in Figure 3
- Combined Telfer–Havieron Project - data shown in Table 3 and graphically in Figure 4

For context, total Scope 1 emission from the combined project will contribute 0.35% to WA's total emissions and 0.06% of Australia's emissions (based on FY2019 totals).

It should be noted that revision of the GHG assessment based on revised forecast mining and production will be completed as part of Revision 2 of this GHG EMP.

**Table 2 – Forecast Scope 1 GHG emissions: Telfer**

| GHG Emission by source (Scope 1) | Tonnes of carbon dioxide equivalent ($tCO_2$-e) per annum | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 2023 | 2024 | 2025 | 2026 | 2027 | 2028 | 2029 | 2030 | 2031 | 2032 | 2033 | 2034 | 2035 | TOTAL |
| Electricity consumption – ore processing | 266,866 | 160,775 | 143,990 | 143,012 | 7,457 | 7,610 | 7,422 | 7,488 | 7,488 | 6095 | 4198 | 3657 | 1255 | 767,313 |
| Electricity consumption – other | 91,654 | 68,892 | 39,842 | 39,813 | 35,746 | 35,751 | 35,745 | 35,747 | 35,747 | 35,706 | 35,649 | 35,632 | 35,560 | 561,487 |
| Diesel consumption – vehicles | 82,429 | 63,838 | 58,959 | 57,104 | 28,552 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 290,883 |
| Other miscellaneous | 6,003 | 5,303 | 4,221 | 3,924 | 1,760 | 1,713 | 1,783 | 1,819 | 1,840 | 1,876 | 1,888 | 1,893 | 1,919 | 35,942 |
| **Total** | **446,952** | **298,808** | **247,012** | **243,854** | **73,516** | **45,074** | **44,950** | **45,054** | **45,056** | **43,676** | **41,736** | **41,182** | **38,734** | **1,655,625** |

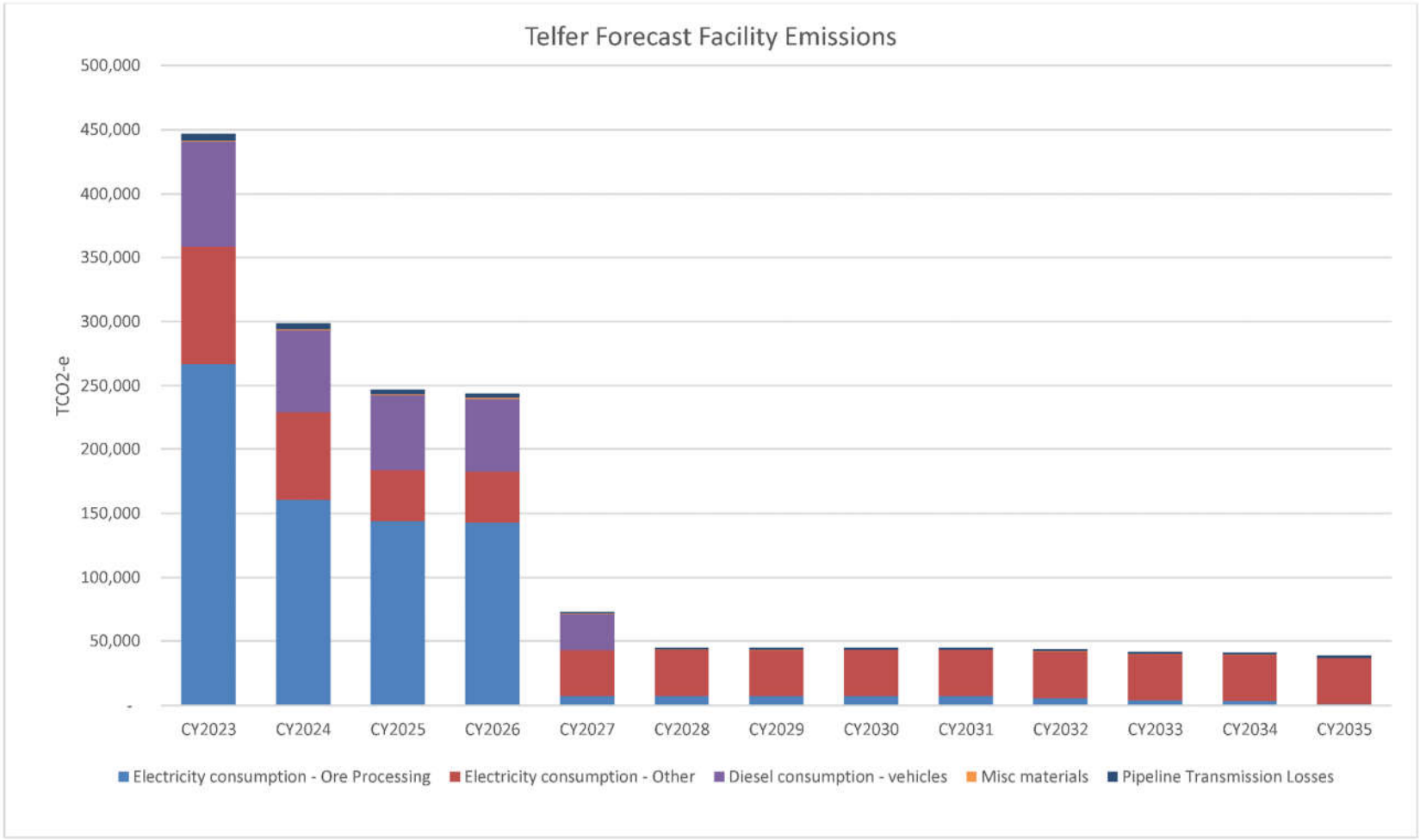


**Figure 2 – Scope 1 GHG emissions: Telfer**

**Table 3 – Forecast Scope 1 GHG emissions: Havieron**

| GHG Emission by source (Scope 1) | Tonnes of carbon dioxide equivalent ($tCO_2$-e) per annum | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 2023 | 2024 | 2025 | 2026 | 2027 | 2028 | 2029 | 2030 | 2031 | 2032 | 2033 | 2034 | 2035 | TOTAL |
| Electricity consumption – ore processing | - | - | 38,842 | 46,881 | 53,089 | 53,636 | 52,961 | 53,199 | 53,199 | 48,213 | 41,429 | 39,491 | 30,899 | 511,839 |
| Electricity consumption – other | 6,749 | 25,544 | 45,902 | 67,474 | 69,408 | 66,950 | 56,315 | 51,629 | 48,977 | 45,462 | 45,258 | 45,200 | 44,942 | 619,809 |
| Diesel consumption – generators | 58 | 230 | 230 | 230 | 230 | 230 | 230 | 230 | 230 | 230 | 230 | 230 | 230 | 2,821 |
| Diesel consumption – vehicles | 2,101 | 26,272 | 33,672 | 33,672 | 33,672 | 33,672 | 33,672 | 33,672 | 33,672 | 33,672 | 33,672 | 33,672 | 33,672 | 398,762 |
| Other miscellaneous | 114 | 627 | 1874 | 2,293 | 4,124 | 4,101 | 3980 | 3925 | 3892 | 3535 | 3768 | 3754 | 3683 | 39,950 |
| Native vegetation clearing | 13,925 | 6,962 | 11,557 | - | - | - | - | - | - | - | - | - | - | 32,444 |
| **Total** | **22,946** | **59,634** | **132,078** | **150,551** | **160,523** | **158,588** | **147,158** | **142,655** | **139,970** | **131,393** | **124,357** | **122,346** | **113,426** | **1,605,626** |

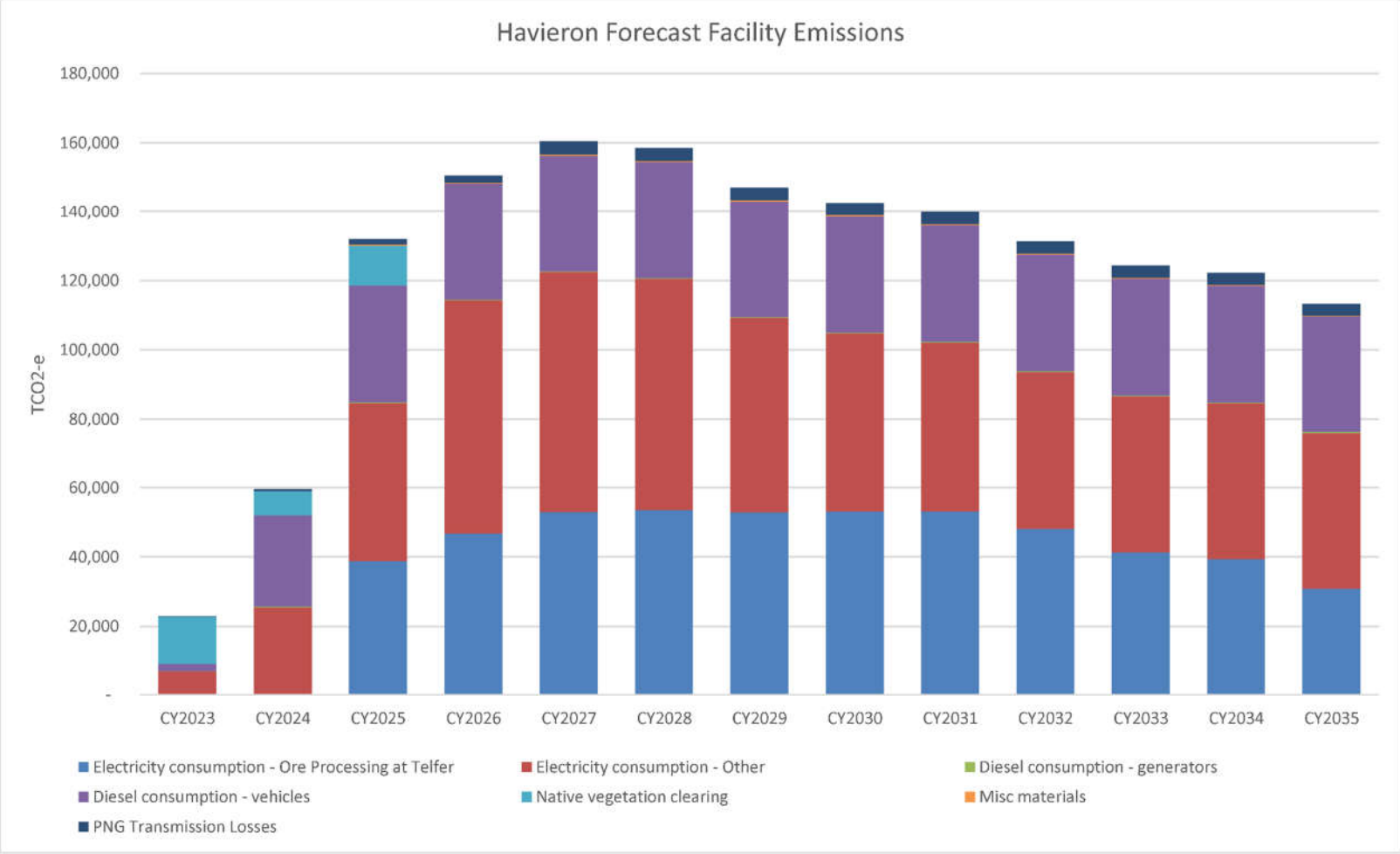


**Figure 3 – Scope 1 GHG emissions: Havieron**

**Table 4 - Scope 1 GHG emissions for the combined Telfer - Havieron Project**

| GHG Emission by source (Scope 1) | Tonnes of carbon dioxide equivalent ($tCO_2$-e) per annum | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 2023 | 2024 | 2025 | 2026 | 2027 | 2028 | 2029 | 2030 | 2031 | 2032 | 2033 | 2034 | 2035 | TOTAL |
| Electricity consumption – ore processing | 266,866 | 160,775 | 182,831 | 189,893 | 60,546 | 53,636 | 52,961 | 53,199 | 53,199 | 48,213 | 41,429 | 39,491 | 30,899 | 1,233,939 |
| Electricity consumption – other | 98,403 | 94,436 | 85,745 | 107,287 | 105,155 | 66,950 | 56,315 | 51,629 | 48,977 | 45,462 | 45,258 | 45,200 | 44,942 | 895,757 |
| Diesel consumption – generators | 58 | 230 | 230 | 230 | 230 | 230 | 230 | 230 | 230 | 230 | 230 | 230 | 230 | 2,821 |
| Diesel consumption – vehicles | 84,530 | 90,110 | 92,629 | 90,776 | 62,224 | 33,672 | 33,672 | 33,672 | 33,672 | 33,672 | 33,672 | 33,672 | 33,672 | 689,645 |
| Other miscellaneous | 6,118 | 5,929 | 6,095 | 6,219 | 5,884 | 5,814 | 5,763 | 5,744 | 5,732 | 5,692 | 5,657 | 5,647 | 5,602 | 75,892 |
| Native vegetation clearing | 13,925 | 6,962 | 11,557 | - | - | - | - | - | - | - | - | - | - | 32,444 |
| **Total** | **469,898** | **358,443** | **379,089** | **394,405** | **234,039** | **203,662** | **192,108** | **187,709** | **185,046** | **175,069** | **166,092** | **163,529** | **152,161** | **3,261,251** |

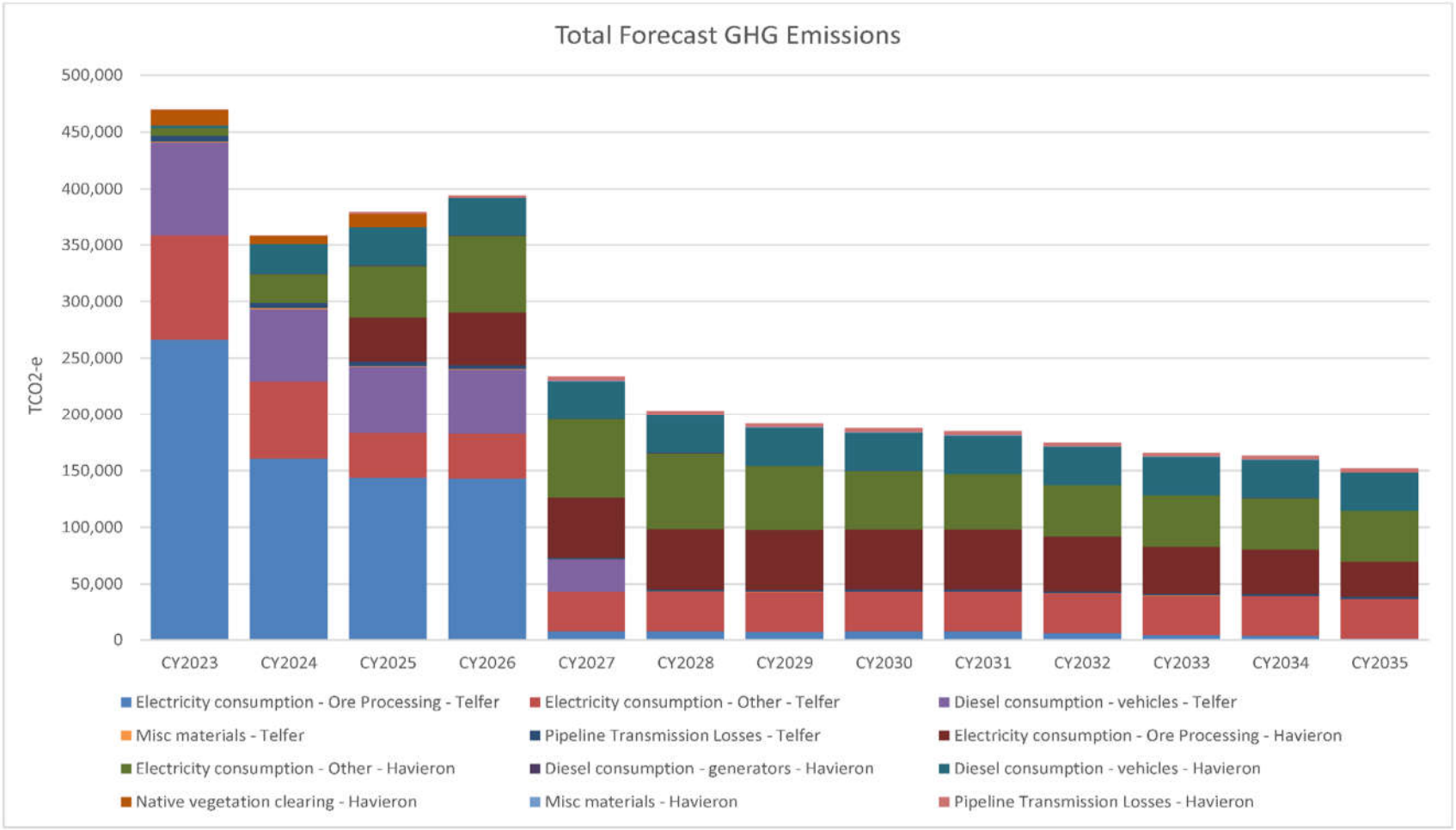


**Figure 4 – Combined Telfer - Havieron Project Scope 1 emissions**

Scope 1 emissions intensity is shown in Table 5. It should be noted that Revision 2 (refer 7.1) of this GHG EMP will contain further information on the calculation of emissions intensities and the progressive reduction therein over the Life of Mine, and benchmarking against actual emissions.

**Table 5 - Calculated Scope 1 emission intensities**

| Parameter | Telfer Project | Havieron Project | Combined Project |
|---|---|---|---|
| Scope 1 Emissions (tCO2-e) | 1,655,625 | 1,605,626 | 3,261,251 |
| Ore processed (t) | 54,806,386 | 22,720,813 | 77,527,200 |
| **Emissions intensity tCO2-e/t** | **0.0297** | **0.0691** | **0.0412** |

### 3.1.4 Scope 3 emissions

Scope 3 emissions for the existing Telfer approved proposal are reported through the NGER process and therefore not assessed as part of the combined Telfer – Havieron Project. Telfer Life of Mine extension and Havieron Stage 2 were assessed by Greenbase (2023) and are shown in Table 6.

***Methodology***

The Greenbase assessment utilised the GHG Protocol Corporate Value Chain (Scope 3) Accounting and Reporting Standard (2011) and the GHG Protocol Technical Guidance for Calculating Scope 3 Emissions (2013) (referenced in the Greenbase assessment where required). The two main methods of quantifying scope 3 GHG emissions are direct measurement and calculation. Direct measurement involves monitoring, mass balance or stoichiometry to quantify emissions, while calculation uses an emission factor and activity data to calculate emissions. Due to the difficulty in direct measurement generally the calculation method is used, as such the general formula for calculating emissions is outlined below:

$$HG\ Emissions = Activity\ Data\ x\ Emisssion\ Factor$$

A variety of emission factor sources were used, including but not limited to:

- Supplier-specific factors as provided by Newcrest
- National Greenhouse Accounts Factors (2022)
- NGER (Measurement) Determination factors
- UK DEFRA factors 2023
- US EPA spend factors 2018

Six categories of scope 3 GHG emissions were determined to be material for the Newcrest:

- Category 1 (purchased goods and services)
- Category 2 (capital goods)
- Category 3 (fuel and energy related activities)

- Category 4 (upstream transportation and distribution)
- Category 9 (downstream transportation and distribution)
- Category 10 (processing of sold products).

Category 7 (employee commuting) was considered immaterial, but calculations were conducted by Greenbase given the availability of the data.

**Table 6 - Scope 3 emission GHG emissions for the Telfer – Havieron Project**

| Scope 3 Emissions - Category | LOM kt CO2-e | Kt CO2-e/year |
|---|---|---|
| Purchased Goods and Services | 237.0 | 17.0 |
| Capital Goods | 311.2 | 22.2 |
| Fuel and Energy Related Activities | 433.6 | 31.0 |
| Employee Commuting | 3.5 | 0.3 |
| Downstream Transportation and Distribution | 300.1 | 21.4 |
| Processing of Sold Products | 1303.6 | 93.1 |
| **Total Scope 3** | **2,589.1** | **184.9** |

Given current divestment and the review of 3rd party arrangements, downstream processing, and value chains, the source and opportunities to reduced Scope 3 GHG emissions will be undertaken in Revision 2 of this GHG EMP (refer 7.1).

## 3.2 TRAJECTORY OF EMISSIONS REDUCTIONS

Key points for this section are:

- The trajectory of emissions for the Telfer – Havieron Project is downward, with a step change reduction commensurate with the depletion of Telfer mineral reserves. Furthermore, after the cessation of Havieron mining in 2035 the project is unlikely to trigger the Safeguard Mechanism.
- It is acknowledged that the presentation of emissions trajectory does not meet the updated EPA requirements. Commitment has been made to review this section in Revision 2 of this GHG EMP (refer 7.1) to clearly present emissions trajectory against throughput and align the implementation of measures and commitments. This is not available for this revision due to the absence of the emissions-intensity determination and divestment meaning the review of projected throughput, and current or future avoidance or reduction measures has not yet occurred.

Irrespective of the above key points the following information of the trajectory of emissions is provided.

Telfer has been reporting under the safeguard mechanism since financial year 2016-17 with a reported baseline of 632,775 tCO2-e. In 2020-21 financial year, an application for a calculated-emissions baseline was submitted for Telfer to cover the 2020-21, 2021-22, and 2022-23 financial years. The Regulator approved this application and established a calculated baseline of 626,808 tCO2-e.

Safeguard Mechanism reforms introduced in 2023 allow existing facilities to apply for facility-specific emission intensities that will be utilised by the CER to calculate future annual baselines. The change was introduced with the intention to ensure future emission increases remain well below business-as-usual levels.

Since Telfer is expected to emit more than 100,000 tCO2-e up to and beyond the 2029-30 financial year, application has been made for an emissions-intensity determination to ensure that the facility is using facility-specific and default emissions intensities in their baseline calculations from 1 July 2023. Determination has not been received at the time of this GHG EMP Revision.

When applying for an emissions intensity determination application, Telfer utilised historic production variables that were previously used to determine the calculated-emissions baseline. This was externally audited for "Reasonable and limited assurance engagement under section 17 of the National Greenhouse and Energy Reporting (Safeguard Mechanism) Rule 2015 (the Safeguard Rule).

The Clean Energy Regulator has determined the following facility specific emissions intensity value for both production variables at Telfer:

- Prescribed Production Variable: Run of Mine Metal Ore (ROM) (tonne)
    - Facility-Specific Emissions Intensity: **0.007244 tCO2-e /tonne**
- Electricity Generation (MWh)
    - Facility-Specific Emissions Intensity: **0.5765 tCO2-e / MWh**

The trajectory to net zero Scope 1 emissions by 2050 is based upon a decline rate of 0.049 per year from the determined Safeguard Mechanism calculated baseline for Telfer of 626,808 tCO2-e. this has been adopted for the combined project.as follows:

(1) 2,773,509 tCO2-e for the period between 1 July 2021 and 30 June 2025

(2) 2,462,460 tCO2-e for the period between 1 July 2025 and 30 June 2030

(3) 1,864,754 tCO2-e for the period between 1 July 2030 and 30 June 2035

(4) 1,316,296 tCO2-e for the period between 1 July 2035 and 30 June 2040

(5) 626,808 tCO2-e for the period between 1 July 2040 and 30 June 2045

(6) 219,383 tCO2-e for the period between 1 July 2045 and 30 June 2050

(7) zero (0) tCO2-e per annum for every five (5) year period from 1 July 2050 onwards.

The planned life of the project ends in 2035 with post-closure activity due to cease in 2045.

Once approved the Havieron mine must be included in the Safeguard Mechanism and a revised determination will be sought.

### 3.2.1 Benchmarking

Emissions intensity data has been used to benchmark GHG emissions from the Combined Project against other gold mines. Emissions intensity is measured as tonnes of Scope 1 CO2-e emitted per tonne of ore processed. The mines selected for benchmarking are similar facilities with information about their Scope 1 emissions publicly available.

Benchmarking was limited as some gold miners reported their emissions intensity as kg of Scope 1 CO2-e emitted per ounce of gold produced. Benchmarking against tonnes of ore processed has been carried out consistent with Newcrest's reporting parameters.

The calculated emissions intensities for Telfer, Havieron and the Combined Project are described in Table 7. Emissions intensity for Havieron is influence by the wholly underground operations and the internal transport of ore to Telfer for processing.

**Table 7 - Calculated emissions intensities**

| PARAMETER | TELFER | HAVIERON | COMBINED PROJECT |
|---|---|---|---|
| Scope 1 Emissions ($tCO_2$-e) | 1,625,735 | 1,605,626 | 3,261,251 |
| Ore processed (t) | 54,806,386 | 22,720,813 | 77,527,200 |
| Emissions intensity ($tCO_2$-e/t) | 0.0297 | 0.069 | 0.041 |

Benchmarking was undertaken using data from sustainability reports for the named facilities for that year, and shown in Table 8. The benchmarking shows that the emissions intensity of the Combined Project (0.0416 tCO2-e/t) is somewhat consistent with other gold mining operations (average of 0.0340 tCO2-e/t). Based on the information available, it was not possible to determine the reasons for the variation in the calculated intensities. Additional benchmarking will be undertaken in Revision 2 of this plan.

**Table 8 - Calculated emissions intensity of other gold mines**

| MINE AND COMPANY | APPROXIMATE THROUGHPUT (Mt ore) | GHG EMISSIONS ($ktCO_2$-e) | EMISSIONS INTENSITY ($tCO_2$-e/t throughput) |
|---|---|---|---|
| 2018 Cadia Valley, NML | 23 | 813 | 0.036 |
| 2018 Sunrise Dam, Anglo Gold Ahanti | 4 | 140 | 0.035 |
| 2019 Cadia Valley, NML | 30 | 949 | 0.032 |
| 2019 Sunrise Dam, Anglo Gold Ahanti | 4 | 146 | 0.036 |

| MINE AND COMPANY | APPROXIMATE THROUGHPUT (Mt ore) | GHG EMISSIONS ($ktCO_2$-e) | EMISSIONS INTENSITY ($tCO_2$-e/t throughput) |
|---|---|---|---|
| 2020 Cadia Valley, NML | 29 | 961 | 0.033 |
| 2020 Sunrise Dam, Anglo Gold Ahanti | 4 | 154 | 0.038 |
| 2021 Cadia Valley, NML | 32 | 1,014 | 0.031 |
| 2021Mungari Mine, Kalgoorlie, Evolution Mining | NA | NA | 0.035 |
| 2021 Cue Gold Operations, Westgold Resources | NA | NA | 0.023 |
| 2021 Meekatharra Gold Operations, Westgold Resources | NA | NA | 0.041 |
| 2021 Fortnum Gold Operations, Westgold Resources | NA | NA | 0.036 |

## 3.3 MITIGATION MEASURES

### 3.3.1 Process for identifying and assessing mitigation opportunities

The process for identifying and assessing mitigation opportunities is through the Telfer – Havieron continuous improvement and adaptive management process shown in Section 4, Figure 5.

Future emission sources are those aspects where a change or development has not yet occurred. These offer the opportunity for designed in mitigations. For current emission sources, or where designed in mitigations are not feasible, operational measures are identified and progressed.

The principles for consideration of mitigation opportunities are:

- Availability and suitability of best practice technology
- Estimated emissions reduction (cost benefit)
- Timeline for implementation in relation to the projected Life of Mine
- Cost of implementation
- Regional constraints on the applicability of global best practice
- Local conditions affecting constructability, safe operability, and cost.

Design mitigations for Telfer are significantly constrained due to the long-term established nature of the site and associated power plant. It should also be noted that the process for identifying and assessing mitigations has not historically followed a consistent framework, with evidence residing in multiple folders.

It should be noted that the update to the EPA template and GHG Factor Guideline has occurred within the period of this assessment. In addition, business factors relating to divestment of the project do not allow for more detail to be provided in this revision. The next revision of this GHG

EMP will include more detail on the technologies assessed, potential emissions reduction, and the status of those assessments.

### 3.3.2 Scope 1 mitigation measures

The focus for Scope 1 emissions reduction is:

- Clean manufacturing principles
- Energy efficient processes
- Selection and procurement of energy efficient plant and equipment and maintenance for optimal performance in a mining setting
- Low emissions substances (e.g. low sulphur diesel and lubricants, ammonia and fuel oil-free blasting agents)
- Designed in mitigations for new development aspects e.g. and siting of mine and surface infrastructure at Havieron to minimise haulage and vehicle wear.

Significant constraints exist for broader designed in avoidance at the existing Telfer power plant and processing infrastructure and this is reflected in the measures assessed and able to be adopted. In addition, the vagaries of mining project joint ventures and commercial aspects mean that some opportunities remain under assessment for consideration by other parties.

***Assessed and adopted***

Scope 1 emissions mitigation measures have been assessed and are outlined in Appendix 1a. Assessment records are maintained on various project files and available for 3rd party verification as required.

Because of the long-term existing nature of the Telfer power plant the designed in mitigations are also included in Appendix 1a and marked as implemented.

***Assessed but not adopted***

Opportunities assessed but not adopted are provided in Appendix 1b, with justification.

It should be noted that significant commerciality and latent business factors relating to joint venture and divestment aspects presently affect decision-making. Mitigations not adopted and further opportunities will be assessed at the discretion of new owners. This may include collaboration via the Pilbara Australian Renewable Energy Hub to identify and progress partnership opportunities.

The next revision of this GHG EMP will include more detail on the technologies assessed and their status. Where mitigation measures are not adopted by incoming ownership justification will be provided.

### 3.3.3 Scope 3 mitigation measures

Mitigation measures adopted to avoid, reduce or offset Scope 3 emissions are provided in Appendix 1c. Scope 3 emissions reduction opportunities are heavily constrained by the remote

location, limited pool of contractors, and unavailability of infrastructure to avoid emissions (e.g. access to electric vehicle charging stations).

The network to support electrified transport options is not currently available within the Pilbara region. Newmont will maintain a watching brief and participate actively in the Pilbara Australian Renewable Energy Hub to support transition to a clean energy future.

Telfer – Havieron product is gold dore (concentrate) and copper matte that are sold to international markets. Newmont are members of the Mineral Council of Australia and subscribe to enduring values throughout their supply chain.

## 3.4 OTHER STATUTORY DECISION-MAKING PROCESSES WHICH REQUIRE REDUCTION IN GHG EMISSIONS

This GHG EMP and associated mitigation measures align with the following requirements:

- Environmental Factor Guideline – Greenhouse Gas Emissions (2023c) with a focus on a downward trajectory of emissions and emissions intensity through avoidance and reduction measures, with offsets only applied where required
- Greenhouse Gas Emissions Policy for Major Projects (State GHG Policy) (Government of Western Australia 2020b), as reflected in the continued downward trajectory of emissions
- National Greenhouse and Energy Reporting Act 2007 (NGER Act) as reflected in the ongoing collection, management and annual public reporting of data
- National Greenhouse and Energy Reporting (Safeguard Mechanism) Rule 2015, as reflected in the trajectory of emissions reduction against determined baseline, and the application of offsets for emissions above the baseline.

Newmont is also maintaining a watching brief on the passage of the *Climate Change Bill 2022* legislation through Federal Parliament and will assess any resultant changes as required.

The United Nations Framework Convention on Climate Change (UNFCCC) Paris Agreement entered into force on 4 November 2016. Under this Agreement, Australia has committed to reducing GHG emissions by 43% below 2005 levels by 2030 with a target to be net zero by 2050. The Paris Agreement states that net zero emissions will be required in the second half of the century to achieve its goals of limiting warming to well below two degrees Celsius above pre-industrial levels. More recently, the Intergovernmental Panel on Climate Change's (IPCC's) 1.5 report indicated that global emissions need to fall by about 45 per cent from 2010 levels by 2030, reaching net zero around 2050, to limit global warming to 1.5 degrees Celsius (EPA 2020b). The Telfer- Havieron Project is aligned with these goals and undertakes to maintain and steepen the downward trajectory of emissions.

In August 2019 the WA released the *State Greenhouse Gas Emissions Policy for Major Projects* (State Emissions Policy). The Policy commits the State Government to working with all sectors of the Western Australian economy to achieve net zero GHG emissions by 2050 and commits to working with the Australian Government's interim target of emission reductions of 43% by 2030. The Policy contemplates the development of GHG management plans by proponents of projects with

significant emissions to detail their contribution towards achieving net zero emissions by 2050 (Government of Western Australia 2020b).

It should be noted that further analysis of mitigations and trajectory will be undertaken in Revision 2 of this plan (refer 7.1).

## 3.5 CONSISTENCY WITH OTHER GHG REDUCTION TOOLS

WA has selected an emissions target of net zero by 2050. For the Telfer – Havieron Project, considerate of the existing age of the facility and location, the pathway and trajectory to achieving this target is through best practice mining practices and practicable emissions reduction actions at the facility level.

In Western Australia, the EPA has elected to assess projects where GHG emissions are expected to exceed 100,000 tonnes of Scope 1 emissions each year measured in carbon dioxide equivalents (CO2-e). This aligns with the Safeguard Mechanism.

## 3.6 OFFSETS

The Safeguard Mechanism sets a maximum emissions cap (a Safeguard Number or 'baseline') for the Telfer – Havieron Project because it emits over 100,000 t CO2-e of Scope 1 emissions per year thereby trigger the National Greenhouse and Energy Reporting (Safeguard Mechanism) Rule 2015.

If the baseline Safeguard Number is exceeded, it is nominally required to offset its exceedance by surrendering Australian Carbon Credit Units to the Clean Energy Regulator (CER).

The Telfer operation and transport from the Havieron mine are energy intensive. Whilst the focus remains on avoiding and continually reducing GHG emissions it is acknowledged that offsets may be required to compliment those mitigations for the period of shortfall in achieving targets.

To ensure the integrity and appropriate assurance of offset For the Telfer – Havieron Project offsets will comprise:

- Purchase of integrity-based offsets from schemes or programs that are verified
- Monitoring and managing a portfolio that ensures sufficient offsets are in place.

Further information shall be provided in Revision 2 of this plan (refer 7.1) to reflect the corporate values of any new ownership and the liabilities that may require offsets based on the forecast production and mitigation measures review.

## 3.7 PROJECTS OPERATING BEYOND 2050

The Telfer- Havieron Project does not extend beyond 2050 based on currently known mineral reserves. This is reviewed throughout LOM and additional reserves or deposits resulting in extension to LOM or intensification of energy usage will be reported through the proposed mechanism.

# 4 ADAPTIVE MANAGEMENT, CONTINUAL IMPROVEMENT, AND REVIEW OF THE GHG EMP

Energy efficiency and emission reduction is good business and required for continued social licence for the life of the project. Newmont are aligned with the United Nations Climate Change adaptation and resilience objectives and framework which has informed the approach. At a facility level we have embedded adaptive management and continual improvement through the application of the model shown in Figure 5.

The continual improvement and adaptive management cycle is informed by and considers:

- Changes to public policy and a State, Federal and International level
- Changes to the uncertainties or assumptions
- Evaluation of routine GHG emissions monitoring data
- New and relevant data and information gained through implementation of this GHG EMP or from external sources
- Effectiveness of internal processes and procedures to reduce and manage GHG emissions
- Changes in markets and technology
- Changes in regional infrastructure and energy resources; and
- Monitoring and corrective actions.

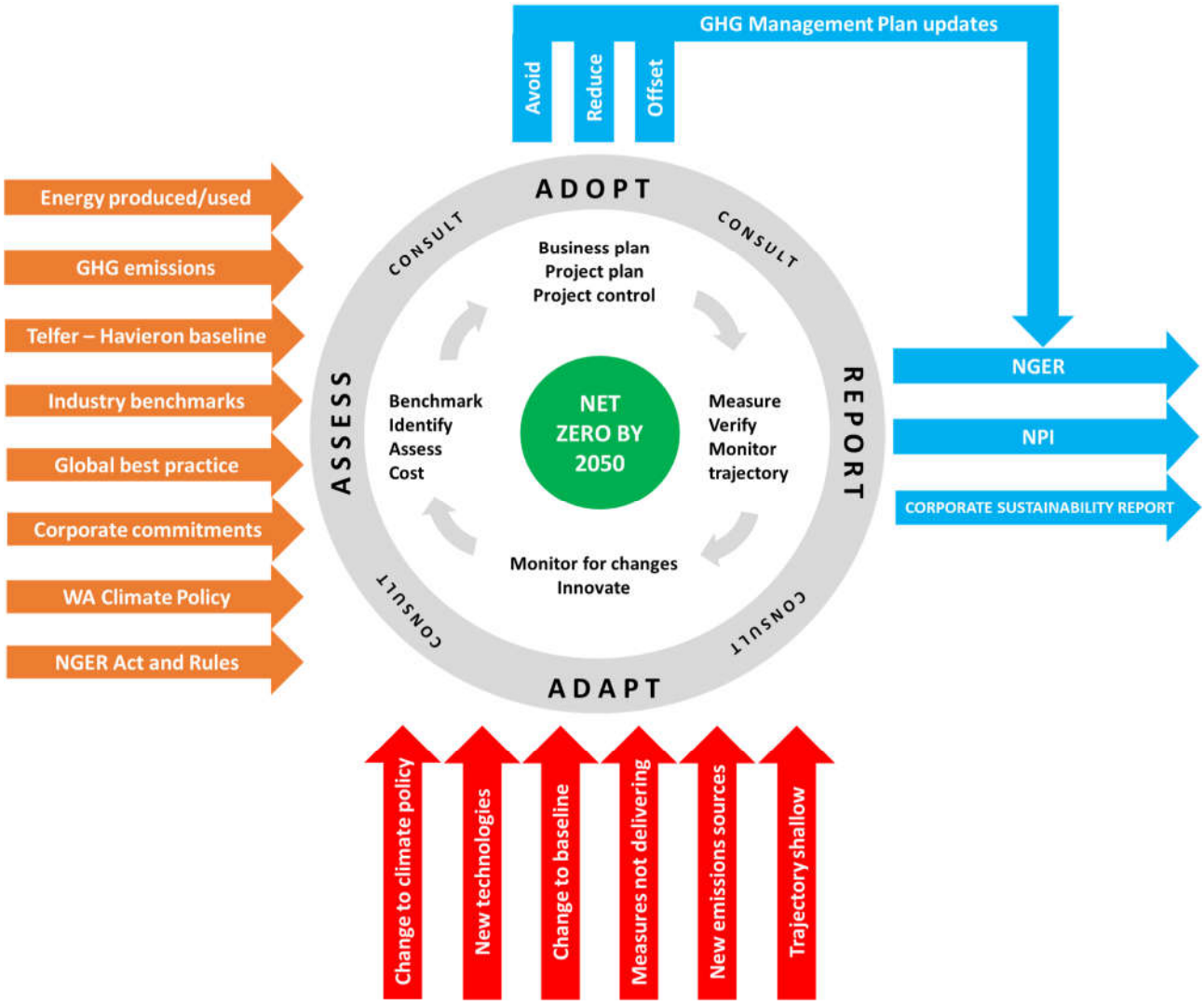


**Figure 5 - Adaptive management process for GHG emission reduction**

The need for adaptation is informed by opportunities and threats to achieving emissions reduction targets at the facility levels but cognisant of latent global climate change factors. The results of the adaptive management process are publicly reported through NGER and NPI reports, Newmont Corporate Sustainability report as part of transparency on environment, social and governance (ESG) performance, and this GHG EMP.

# 5 REPORTING

Annual reporting is undertaken for the combined Telfer – Havieron Project and will continue for life of project as required under NGERs for facilities exceeding 100,000 GJ, and includes:

- GHG emissions
- Energy summary (production and consumption)

- Emissions intensity
- Performance against Safeguard Mechanism (noting reforms that will be applied for the FY2024 reporting period for emissions intensity).

In order to facilitate the above reporting the project maintains data including but not limited to: Production statistics; fuel and materials consumption; land clearance and progressive rehabilitation; and the implementation and effectiveness of avoidance and reduction measures.

Reports are prepared by a specialist 3rd party based on activity data provided by Telfer – Havieron. Data is verified and calculations applied in compliance with the methods and factors specified in NGERs.

Reports are made public through the CER website and through Corporate Sustainability Annual Reports.

# 6 STAKEHOLDER CONSULTATION

The following external stakeholders have been engaged through the development of the Telfer – Havieron Project including:

- Consultation with the Traditional Owners through ongoing Relationship Committee Meetings with the Jamukurnu Yapalikurnu Aboriginal Corporation (JYAC) as governed by the conditions of the Indigenous Land Use Agreement (ILUA). Of relevance to GHG are the ongoing discussion of land clearance and the siting of infrastructure in relation to areas of cultural significance. Decisions are made and documented in collaboration with JYAC.
- Revision 0 of this GHG EMP has been submitted to the EPA through the referral process on 21/04/2023. Specific feedback was provided on 26/06/2024 requiring *inter alia* the updating of this plan to Revision 1 to align with the EPA Environmental Factor Guideline Greenhouse Gas Emissions (2023), and associated template, and 3rd party best practice review.

Stakeholder engagement with will continue with JYAC under the ILUA throughout the life of project.

Ongoing engagement with WA Regulatory Authorities will occur throughout the life of project as and when GHG aspects area. This includes after any changes to Commonwealth or WA public policy, and when considering new emissions reduction projects that require permitting.

The GHG EMP, NGER annual reports, and NPI annual reports are publicly available to inform the general community and other interested stakeholders. Engagement with those parties will occur upon contact by them.

# 7 CHANGES TO GHG EMP

## 7.1 COMMITMENT TO REVISION 2 OF THIS GHG EMP

It is acknowledged that a number of factors have prevented this revision of the GHG EMP from fully meeting best practice guidelines. These latent factors are:

- The Telfer – Havieron Project has endured a number of regulatory changes that have delayed assessment and resulted in the previously 'stand alone' Havieron proposal being considered a significant amendment to the existing Telfer project. During the period of assessment the EPA has revised the EPA Environmental Factor Guideline - Greenhouse Gas Emissions (2023) and issued an associated template. The template has been applied but not all calculations are available at the time of writing.
- Divestment of the Telfer – Havieron Project by Newmont means scheduled throughput and GHG emissions reduction measures, and liabilities requiring offsetting must be reviewed by new owners, and the required assessments commissioned to meet the EPA 2023 guidelines.

In order to progress the proposal and secure the significant regional and state level socioeconomic contribution the Telfer – Havieron Project commits to a significant revision of the information presented herein. The specific deficiencies and commitments are outlined below in Table 9.

**Table 9 – GHG EMP Revision 2 commitments**

| ASPECT TO BE REVISED | INFORMATION TO BE PRESENTED IN REVISION 2 |
|---|---|
| Review of Scope 1 and Scope 3 emissions reduction opportunities | • Additional opportunities for Scope 1 emissions reduction<br>• Additional opportunities for Scope 3 emissions, including downstream and commercial policy measures<br>• Estimate of actual emission reductions from opportunities assessed<br>• Estimate of emission intensity reduction from opportunities assessed<br>• Ranking of best practice technologies (suggest on emission reduction potential)<br>• Quantified and realised benefits for each mitigation measure adopted. |
| Emissions trajectory | • Further information on the calculation of emissions intensities<br>• Progressive reduction in emissions intensity and total emissions over the Life of Mine presented both in table and graphical forms<br>• Presentation of mitigation measure adopted and planned against emissions trajectory<br>• Benchmarking against actual emissions.<br>• Presentation of trajectory in conformance with the EPA template requires, including:<br>  ○ Trajectory of annual emissions, and total emissions over the expected life of the proposal<br>  ○ Trajectory of emissions which will be avoided, reduced and offset (separately and together)<br>  ○ Trajectories presented in both table and graph formats (time periods aligned) and ensure: |

| ASPECT TO BE REVISED | INFORMATION TO BE PRESENTED IN REVISION 2 |
|---|---|
| | ▪ Trajectory graphs including annual time periods along the X axis, and emissions as tonnes of CO2-e along the Y axis. 5-year commitments and targets should be overlaid.<br>▪ Trajectory tables should include annual emissions, emissions totalled for 5-year commitments and targets, and life of proposal emissions<br>○ A separate trajectory of scope 3 emissions consistent with the above. |
| Period of GHG assessments | • Extension of forecast GHG emissions and emissions intensity to include the decommissioning and rehabilitation phases of the project (i.e. to 2045). |
| Offsets | • Further information on offset forecast based on expected liabilities for all phases of the Telfer – Havieron Project and the point at which offsets are unlikely to be required.<br>• Likely opportunities to purchase suitable offsets through the life of the proposal and any barries posed by expected liabilities.<br>• The criteria for selecting offsets that are ethical, sustainable and assured. |

## 7.2 ONGOING REVISION AND CHANGES

After completion of Revision 2 as stated above, this GHG EMP will be reviewed 5 yearly in accordance with the Paris Agreement and CER requirements, and include any new or increased emissions, assessment of new mitigations and justification if not adopted, and assessment of available carbon offsets.

Changes to this GHG EMP can only be made in accordance with the instructions in 'How to prepare Environmental Protection Act 1986 Part IV Environmental Management Plans Instructions' (EPA, October 2021) by completing the template table in Table 10. This is required for each revision.

**Table 10 – Changes to GHG EMP**

| | | | | | |
|---|---|---|---|---|---|
| **COMPLEXITY OF CHANGES** | MINOR REVISIONS ☐ | | MODERATE REVISIONS ☐ | | MAJOR REVISIONS ☐ |
| **DATE REVISION SUBMITTED TO EPA: DD/MM/YYY** | | | | | |
| **IS THE CHANGE PROPOSED TO BE IMPLEMENTED UNDER CONDITION C-3-3?**<br>**IF SO, THE PROPONENT MUST PROVIDE A COPY TO THE CEO AT LEAST 20 DAYS BEFORE COMMENCING IMPLEMENTATION.** | | | | YES ☐ | NO ☐ |
| **PROPONENTS OPERATIONAL REQUIREMENT FOR APPROVAL OF REVISION:** | <ONE MONTH ☐ | <SIX MONTHS ☐ | >SIX MONTHS ☐ | NONE ☐ | |
| **REASON FOR TIMEFRAME:** | | | | | |

| ITEM No. | GHG EMP SECTION No. | GHG EMP PAGE No. | SUMMARY OF CHANGES* | REASON FOR CHANGES | NEW OR INCREASED ADVERSE IMPACTS TO THE ENVIRONMENT?<br>RISK TO THE ACHIEVEMENT OF LIMITS, OUTCOMES OR OBJECTIVES? |
|---|---|---|---|---|---|
| 1. | | | | | |
| 2. | | | | | |
| 3. | | | | | |

*Separate track changes document to be provided.

# GLOSSARY

| TERM / ACRONYM | DESCRIPTION |
|---|---|
| **Carbon offsets** | A last resort means to compensate for emissions that cannot be avoided or that exceed emission reduction commitments and targets. |
| **CER** | Clean Energy Regulator, being the Commonwealth statutory authority that administers clean energy schemes including the NGER scheme. |
| **$CO_2$-e** | Carbon dioxide equivalent, being the amount of the gas multiplied by a value specified in the regulations in relation to that kind of greenhouse gas. |
| **EPA** | Western Australian Environmental Protection Authority |
| **GHG** | Greenhouse gases, being all gases reported under the NGER scheme as follows:<br>• Carbon dioxide ($CO_2$)<br>• Methane ($CH_4$)<br>• Nitrous Oxide ($N_2O$)<br>• Sulphur hexafluoride ($SF_6$)<br>• Specified kinds of hydrofluorocarbons and perfluorocarbons. |
| **LPG** | Liquefied Petroleum Gas |
| **Net zero emissions** | An overall balance between GHG emissions and removals |
| **NGER** | National Greenhouse and Energy Reporting as required under the Commonwealth *NGER Act 2007*. |
| **Non-transport** | Fuel that is combusted but does involve transport (e.g. generators) |
| **Regulations** | *NGER Regulations 2008* |
| **Safeguard Mechanism** | A framework for reducing emissions at facilities with scope 1 emissions of more than 100,000 t CO2-e per year. It sets legislated limits (baselines) on the GHG emissions of these facilities. The baselines will decline on a trajectory consistent with achieving Australia's emission reduction targets. |
| **Scope 1** | Direct emissions of greenhouse gas into the atmosphere as a result of activities (e.g. air-conditioning, fuel use, process emissions of GHGs) |
| **Scope 2** | Emission of greenhouse gas related to purchased electricity (not relevant to the Telfer – Havieron Project). |

| | |
|---|---|
| **Scope 3** | Indirect emissions from activities upstream and downstream of the facility that are controlled by other (e.g. upstream production of fuels, downstream transport of products). Scope 3 emissions are not reportable under NGER. |
| **Transport** | Includes purposes for which fuel is combusted for transport by vehicles registered for road use, rail transport, and air transport. |

# APPENDICES

## APPENDIX 1A - SCOPE 1 EMISSION MITIGATION MEASURES ADOPTED

| OPPORTUNITY | MITIGATION | HEIRARCHY | STATUS |
|---|---|---|---|
| **POWER GENERATION (TELFER AND HAVIERON SUPPLY)** | | | |
| Reduce gas consumption by power station through gas plant efficiencies | Power station closed-cycle conversion for improving/increasing gas plant efficiency. | Reduce | Under consideration pending new ownership |
| | Combined cycle option/reduction of home load<br>Continuous process monitoring of power station performance to inform optimisation actions in real time and early operational intervention and inform reliability planning. | Reduce | Implemented |
| Increase gas turbine efficiency | Increase the GT heat rate/MW: Best efficiency is achieved when the GT is operated in the 80-100% of its capacity. | Reduce | Implementation planning underway |
| | Reduce the Spinning reserve:<br>• Reduction of sprint water usage, which is currently in progress<br>• Controlling the GT air inlet temperature – Effective use of chillers appropriately to the load requirements<br>• Better load management: Communication with the SAOC team | Reduce | |
| Process emissions reduction | Fuel additives for power engines to assist with fuel combustion. | Reduce | Implemented |

| OPPORTUNITY | MITIGATION | HEIRARCHY | STATUS |
|---|---|---|---|
| | NOx water system optimisation as per GE Gas Turbine OEM to control thermally generated NOx gas and avoid NOx in flue emissions. | Avoid | Design - implemented |
| **MINING - TELFER** | | | |
| Mining process optimisation | Reduce ore stockpile re-handling where possible to minimise diesel consumption | Avoid | Implemented |
| | Precision / selective mining based on, as possible, ore minerology and characteristics to avoid generating additional waste requiring movement. | Avoid | Implemented |
| | Material designation optimisation to minimise haulage and re-handling. | Reduce | Implemented |
| | Modify stacker chutes and crusher spiders to reduce crusher downtime to minimise rehandle. | Reduce | Implemented |
| | Remove reef stope production bottleneck for most efficient use of underground fleet. | Reduce | Implemented |
| | Short-haul projects to identify and implement initiatives to reduce run hours and fuel usage. | Reduce | Implemented |
| **PROCESSING - TELFER** | | | |
| | Modify crushing screen size from 110mm to 120mm to decrease resistance and associated power usage (1MW/h saving) | Reduce | Implemented |

| OPPORTUNITY | MITIGATION | HEIRARCHY | STATUS |
|---|---|---|---|
| Reduce power consumption through optimised crushing and grinding | Reduce SAG Mill ball mill power lower set point value to produce an optimised grind size (less fines) | Reduce | Implemented |
| | Maximise water recycling to minimise bore water extraction | Reduce | Implemented |
| **MINING - HAVIERON** | | | |
| Design location for surface infrastructure | Location of Waste Rock Landform 2 adjacent to mine boxcut to minimise round trip haulage | Reduce | 2025 (as per construction schedule) |
| Battery backup | Battery at Havieron for emergency backup required. Consideration of solar + batter and utilisation of Telfer spinning reserve. | Reduce | Under assessment |
| Note Appendix 1b for assessment of renewable and electrification of fleet opportunities. | | | |
| **PLANT, EQUIPMENT AND SUBSTANCES (TELFER AND HAVIERON)** | | | |
| Fleet fuel efficiency | Fuel additives for mining equipment (where in compliance with OEM) to improve oxidation of particles from combustion for efficiency. | Reduce | Implemented |
| | Fleet tracking system to improve utilisation and driver techniques. | Reduce | Implemented |
| | Removal of excess fleet to maximise utilisation and efficiency. | Reduce | Implemented |
| | Haul road maintenance to increase tyre life and reduce fuel consumption. | Reduce | Implemented |
| Efficient vehicles, plant and equipment | Specification of emission reduction devices on new vehicles, including diesel filters, catalytic converters and wet scrubbing systems (Tier 4 US EPA standard achieved wherever possible). | Avoid | Implemented |

| OPPORTUNITY | MITIGATION | HEIRARCHY | STATUS |
|---|---|---|---|
| | Fleet maintenance program including emissions diagnostics and inspection of emission reduction devices. | Reduce | Implemented |
| | End of life replacement of assets with energy efficient models in accordance with procurement standard. | Reduce | Progressive at end of asset life |
| Low emissions substances | Replacement of blasting emulsion in open pit with one that contains no ammonium nitrate or fuel oil. | Avoid | Implemented |
| | 'Buy clean' approach to fuel and lubricants. Where possible ultra-low sulphur diesel and low sulphur lubricants are purchased. | Reduce | Implemented |

## APPENDIX 1B – SCOPE 1 EMISSION MITIGATION MEASURES ASSESSED BUT NOT ADOPTED

| OPPORTUNITY | ASSESSMENT UNDERTAKEN | JUSTIFICATION FOR NOT ADOPTING |
|---|---|---|
| **POWER STATION** | | |
| Renewable power energy power supply<br>Potential for solar, wind and batteries to compliment current power station | Newcrest Corporate Net Zero Team assessment (Commercial in Confidence – files available upon request) | Due to the base load requirements for safety-critical need for underground ventilation, renewable power sources can only be considered for auxiliary uses and during station blackout. Nonetheless they have been considered as a complimentary power source.<br>Renewable energy opportunities do not offer sufficient emissions reduction paybacks when taking into account the timing of delivery in relation to Life of Mine, and the resources and land clearance required for |

| OPPORTUNITY | ASSESSMENT UNDERTAKEN | JUSTIFICATION FOR NOT ADOPTING |
|---|---|---|
| | | implementation of wind or solar. Telfer also has priority habitat and cultural heritage restrictions to land clearance.<br>Renewables may be reviewed in the future depending on latent business factors and any future discovery of additional mineral reserves. |
| Electrification of fleet | Linked to the above | Electrification without renewable power does not deliver the net benefits required. This opportunity is linked to the above assessment. |
| Spinning reserve optimisation through changing generators | Power system specialist review. Files available upon request. | Telfer only has three large 48MW generators. In order to pursue this opportunity additional smaller generators would be required, and this is both cost prohibitive and unnecessary given the current generators. |
| Power system efficiency improvements by replacing generators | Identification of opportunities by Power System specialists. Cost analysis for generator replacement. Files available upon request. | Limited opportunity to improve schedule or optimisation based on the existing three 48MW generators. Payback on replacement cost would exceed LOM. |
| Power station system through combined cycle | Identification of suitable replacement engines. Costing of suitable replacement engines and calculation of efficiency. Files available upon request. | High cost, at US$25M per engine for a potential increase in efficiency from 33% to 42%. Payback is a minimum of 15 years and would exceed LOM.<br>Reconsideration of this opportunity may be undertaken by new owners and if additional mineral reserves are identified. |
| Generator engine performance optimisation | Operational review by specialist. Analysis of available retrofitting to optimise diesel engines. Files available upon request. | Variable sprint already implemented on NOx control.<br>The only further potential would be on the diesel generators, however these are only used for emergency backup and of an older style making retrofitting complex and costly. |

## APPENDIX 1C - SCOPE 3 EMISSION MITIGATION MEASURES

| OPPORTUNITY | MITIGATION | HEIRARCHY | IMPLEMENTATION |
|---|---|---|---|
| 'Source local' policy | Reduce emissions associated with transport of goods from outside of Western Australia | Reduce | Implemented |
| 'Green' cement to reduced embodied energy in ground supports and paste production binder | 'Green' cement utilises fly ash as a whole or partial replacement for high embodied energy Portland cement. | Reduce | Implemented when possible, noting the impact of market factors |

## APPENDIX 2 – BEST PRACTICE 3RD PARTY REVIEW

Addended to this document.

EVOLVEABLE
CONSULTING

# TELFER HAVIERON GREENHOUSE GAS ENVIRONMENTAL MANAGEMENT PLAN

## EXTERNAL PEER REVIEW

Prepared for:

Newmont

Peer Review Revision 0: August 2024

## Disclaimer

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# Acronyms and Abbreviations

| Term | Definition |
|---|---|
| **CAPEX** | Capital Expenditure |
| **CEFC** | Clean Energy Finance Corporation |
| **$CO_2$-e** | Carbon dioxide equivalent |
| **EPA** | Environmental Protection Authority |
| **GHG** | Greenhouse Gas |
| **GHG EMP** | Greenhouse Gas Environmental Management Plan |
| **MRIWA** | Minerals Research Institute of Western Australia |
| **MS** | Ministerial Statement |
| **MW** | MW |
| **MWh** | Megawatt hour |
| **Newmont** | Newmont Mining Limited |
| **NGER** | National Greenhouse and Energy Reporting Scheme |
| **OPEX** | Operational Expenditure |
| **Scope 1** | Scope 1 GHG emissions are those released to the atmosphere as a direct result of an activity, or a series of activities, which are part of a Proposal being considered by the EPA. |
| **Scope 2** | Scope 2 GHG emissions are those from the indirect consumption of an energy product by the proposal. E.g., emissions from the generation of electricity purchased by the proposal. |
| **Scope 3** | Scope 3 emissions are indirect GHG emissions other than Scope 2 emissions that are generated in the wider community. Scope 3 emissions (both upstream and downstream) occur as a consequence of the activities of a proposal but from sources not owned or controlled by the proponent as part of the proposal. |
| **t** | tonne |

# 1 Introduction

Evolveable Consulting Pty Ltd was engaged by Newmont Mining Limited (Newmont) to perform an independent expert peer review of the Telfer-Havieron Greenhouse Gas Environmental Management Plan (GHG EMP) in accordance with the Western Australian Environmental Protection Authorities (EPA) *Environmental Factor Guideline: Greenhouse Gas Emissions*.

## 1.1 Scope

The scope of the expert peer review is to:

- Review of emissions accounting
- Assess demonstration of best practice in design and operations.
- Review industry benchmarks.
- Review offset liabilities and plans to satisfy (integrity and availability).

## 1.2 Project Context

The Telfer – Havieron Gold Mining proposal involves the expansion of the existing Telfer Gold Mine to incorporate the Havieron underground mine located approximately 45 km east of the Telfer Project. The Telfer project has been in operation since initial construction in 1975 and has had a regulatory-approved Greenhouse Gas Plan[1] in place since 2003.

Where possible, the Havieron project is utilising Telfer's existing infrastructure, including the 160-megawatt (MW) gas-fired power station and the processing plant at 25% capacity until 2035.

The GHG EMP outlines the proposed decrease of processing Telfer ore with the cessation of mining activities at Telfer in 2027; the processing of ore from Havieron will continue intermittently, with an annual processing rate of 6 million tonnes, approximately 25% of current capacity until 2035.

Newmont has indicated that the project is currently constrained in making significant commercial decisions due to ongoing divestment and a change in ownership, as detailed in the GHG EMP. Consequently, the existing entity's commitments to decarbonisation are limited until the new ownership is finalised. Section 9, Table 7.2 of the GHG EMP outlines these constraints and the commitments for updates in a future revision. This review is based solely on the GHG EMP information provided in Revision 1.

It is important to note that certain aspects of the EPA guidance are absent from the GHG EMP. Newmont acknowledges the interim gaps identified within the current plan and has outlined commitments in Table 9 to address the issues highlighted in this peer review. It is recommended

[1] Telfer Compliance Assessment Report 2021/22 (702-8000-EN-PMT-0001-A)

that a secondary review be conducted following the implementation of these commitments as part of Revision 2.

## 1.3 Documentation Reviewed

As part of this process, the following documentation was reviewed:

- Newmont, Telfer – Havieron Gold Mining Project Greenhouse Gas Environmental Management Plan, Rev 1 (702-8000-EN-PLA-0008)
- Greenbase Telfer-Havieron_GHG_Emissions_Assessment
- Greenbase Telfer LOM Extension and Havieron Stage 2 Scope 3 Technical Report v112629226-REP-Telfer Safeguard Audit Report
- Telfer - Havieron Gold Mining Project Section 38 Environmental Protection Act 1986 Referral Supporting Document, Revision 1.1, 30 March 2023
- Telfer Operations Annual Audit Table Ministerial Statement 605, Ministerial Statement 606, July 2021 – June 2022
- Newcrest Mining Limited, Greenhouse Gas Management Plan, 2021 (700-675-EN-PLA-2008) Link: Telfer Greenhouse Gas Management Plan (newcrest.com)
- Supporting documentation:
    - Ministerial Statement 605
    - Ministerial Statement 606
    - Ministerial Statement 650

# 2 Emission and Target Review

## 2.1 Emission Estimates

As part of this review, the emissions quantifications were reviewed to ensure alignment with the requirements of the EPA *Greenhouse Gas Emissions Factor guideline*[2].

Section 3.1 of the GHG EMP outlines the emissions estimates for the project. This review concentrates on the material emission sources, the combustion of fuel in the mining fleet, and the consumption of natural gas in the Telfer power plant, which account for between 72% and 96% of the estimated annual emissions across the life of mine.

Other minor sources of emissions include liquified petroleum gas combustion, use of lubricating oils, grease usage, acetylene combustion and leakage of sulphur hexafluoride from switchgear.

### 2.1.1 Scope 1 Emissions

The emissions data and associated assumptions that formed the basis of the GHG EMP are consistent with recognised industry best practices in emissions accounting. Scope 1 emissions have been quantified using:

1. Government of Australia's 2008 National Greenhouse and Energy Reporting (Measurement) Determination[3].
2. Carbon sequestration loss due to biomass disturbance has been calculated using the Full Carbon Accounting Model (FullCAM) guidelines produced by the Department of Industry, Science, Energy and Resources (DISER, 2020)[4] Carbon Credits (Carbon Farming Initiative- Avoided Clearing of Native Regrowth) Methodology Determination 2015 (CER, 2018)[5].

The Telfer operations have maintained a GHG EMP since 2003 and report to the Clean Energy Regulator under the National Greenhouse and Energy Reporting (NGER) Act[6] and the Safeguard Mechanism.

Emission estimates for the GHG EMP and the proposal were based on historical emissions data to support the calculations.

[2] Environmental Factor Guideline – Greenhouse Gas Emissions | EPA Western Australia
[3] Federal Register of Legislation - National Greenhouse and Energy Reporting (Measurement) Determination 2008
[4] Full Carbon Accounting Model (FullCAM) - DCCEEW
[5] Federal Register of Legislation - Carbon Credits (Carbon Farming Initiative—Avoided Clearing of Native Regrowth) Methodology Determination 2015
[6] Federal Register of Legislation - National Greenhouse and Energy Reporting Act 2007

### 2.1.2 Scope 2 Emissions

There are no Scope 2 emissions related to this project.

### 2.1.3 Scope 3 Emissions

The Scope 3 greenhouse gas (GHG) estimates for this project were developed in alignment with good industry practices, specifically utilising the GHG Protocol Corporate Value Chain (Scope 3) Accounting and Reporting Standard (2011)[7] and the GHG Protocol Technical Guidance for Calculating Scope 3 Emissions (2013)[8]. A range of common emission factor sources were employed, including:

- Supplier-specific factors provided by Newmont
- National Greenhouse Accounts Factors (2022)[9]
- NGER (Measurement) Determination factors
- United Kingdom Department for Environment, Food and Rural Affairs factors (2023)[10]
- United States EPA spend factors (2018)[11]

For downstream processing, it is assumed that all gold is refined at the Perth Mint, which has provided a specific emission factor. Several different refineries refine the copper product. Newmont sourced emission factors directly from the primary refineries they supply, and an average factor was derived from the specific emissions factors provided by four refineries. This approach is aligned with good practice.

Six categories of Scope 3 GHG emissions were identified as material for Newmont:

- Category 1 (purchased goods and services)
- Category 2 (capital goods)
- Category 3 (fuel and energy-related activities)
- Category 4 (upstream transportation and distribution)
- Category 9 (downstream transportation and distribution)
- Category 10 (processing of sold products)

Although Category 7 (employee commuting) was deemed immaterial, calculations were still conducted.

[7] Corporate Value Chain (Scope 3) Standard | GHG Protocol
[8] Scope3_Calculation_Guidance_0.pdf (ghgprotocol.org)
[9] National Greenhouse Accounts Factors: 2022 - DCCEEW
[10] Greenhouse gas reporting: conversion factors 2023 - GOV.UK (www.gov.uk)
[11] GHG Emission Factors Hub | US EPA

## 2.2 Emission Targets

Section 3.2 of the GHG EMP proposes emission reduction targets in five-year increments and outlines the trajectory to achieve net zero Scope 1 emissions by 2050.

It is important to note that the project's planned life concludes in 2035, with post-closure activities expected to cease by 2045. Consequently, these targets align with the minimum expectations of the EPA Guidelines, acknowledging that the final decade (2035–2045) will focus on mine closure and rehabilitation requirements.

# 3 Best Practice Demonstration

A desktop literature review was conducted to gain insight into the best practices within the mining industry in Western Australia, nationally and internationally.

There are constraints in utilising international references as they do not consider geographical context of the operations.

Western Australia and National

- Roadmap to decarbonisation – Mining in a low-emissions economy, Clean Energy Finance Corporation (CEFC) and Minerals Research Institute of Western Australia (MRIWA), September 2022[12]

- Technology solutions for decarbonisation – Mining in a low-emissions economy, Clean Energy Finance Corporation (CEFC) and Minerals Research Institute of Western Australia (MRIWA), September 2022[13]

- The compelling case for decarbonisation - Mining in a low-emissions economy, Clean Energy Finance Corporation (CEFC) and Minerals Research Institute of Western Australia (MRIWA), September 2022[14]

- Butler, C, Maxwell, R, Graham, P & Hayward, J 2021, Australian Industry Energy Transitions Initiative Phase 1 Technical Report, Climate Works Australia[15]

- Climate works Centre and Climate-KIC Australia 2022, Setting up industrial regions for net zero, Phase 2 report. Australian Industry Energy Transitions Initiative.[16]

- Climateworks Centre and Climate-KIC Australia 2023, 'Pathways to industrial decarbonisation: Positioning Australian industry to prosper in a net zero global economy', Australian Industry Energy Transitions Initiative, Phase 3, Climateworks Centre[17]

International

- World Gold Council, Gold and Climate change: The Energy Transition, 2022[18]

[12] cefc_mriwa_roadmap-to-decarbonisation.pdf
[13] cefc_mriwa_technology-solutions-for-decarbonisation.pdf
[14] CEFC MRIWA compelling case for decarbonisation - Clean Energy Finance Corporation
[15] Australian Industry ETI - Phase 1 Technical Report | ETC (energy-transitions.org)
[16] Setting up industrial regions for net zero – Australian Industry Energy Transitions Initiative Phase 2 report - Climateworks Centre
[17] Pathways to industrial decarbonisation: Positioning Australian industry to prosper in a net zero global economy - Climateworks Centre
[18] Gold and climate change: The energy transition | World Gold Council

The reviewed documentation pertains to the mining industry and decarbonisation best practices that can be implemented to achieve low-emission mining operations. These documents, developed within the past five years, focus on material emissions sources along the mining value chain, such as diesel consumption and energy generation.

### 3.1.1 Decision-making Criteria

In the context of decision-making for emission mitigation opportunities, Newmont has considered the following principles:

- Availability and suitability of best practice technology.
- Estimated emissions reduction (cost benefit).
- Timeline for implementation in relation to the projected Life of Mine.
- Cost of implementation.
- Regional constraints on the applicability of global best practice.
- Local conditions affecting constructability, safe operability, and cost.

Appendix 1a and 1d provide further summary comments on the justification for adoption or not of each emission reduction opportunity.

The screening criteria used in the “Technology Solutions for Decarbonisation – Mining in a Low-Emissions Economy” study, developed by the CEFC and MRIWA (2022). The following list of screening criteria, extracted from the study, is not exhaustive as it varies from technology to technology. However, common elements are included:

- Emissions benefit
- Technology Readiness
- Commercial readiness
- Renewable Energy Certificate generation
- Land Intensity
- Capital Expenditure (CAPEX)
- Operational Expenditure (OPEX)
- Environmental, Social and Governance Concerns
- Safety and Health Benefits

Given the alignment between the decision-making criteria employed by Newmont and those used in the CEFC and MRIWA study[19], the approach used is generally consistent with industry best practices for screening and assessing emission reduction opportunities.

## 3.2 Industry Best Practice Guidance

It should be noted that decarbonisation technologies are rapidly evolving, and as such, best practice expectations will change over time as technologies mature. This assessment reviewed industry best practice guidance for both near- and long-term time horizons.

Industry best practices for decarbonising mining operations, as derived from the studies reviewed, are summarised into the following categories:

Mine Haulage

- Electrification
- Low emission fuels (Hydrogen, biodiesel)

Mobile Equipment

- Electrification
- Low emission fuels

Stationary energy

- Switch to network
- Renewable energy
- Energy storage

Incremental process improvements and optimisation have been excluded from this best practice assessment. It is important to note that the combination of technologies assessed and selected will be specific from site to site, considering site location and specific characteristics.

Factors that can influence emissions intensity in mining and processing, particularly with onsite gas power generation, include the grade of ore, electricity source and efficiency, mine design, type, and depth.

The GHG EMP for the Telfer and Havieron operations evaluates the context and potential technologies for reducing greenhouse gas emissions applicable to the project's specific circumstances.

[19] Clean Energy Finance Corporation, cefc.com.au/media/omzlxjpl/cefc_mriwa_technology-solutions-for-decarbonisation.pdf

### 3.2.1 Scope 1

Section 3.3.2 and Appendix 1a of the Telfer-Havieron GHG EMP assess the Scope 1 emission reduction opportunities that have been assessed, adopted or are under future consideration.

Initiatives can be summarised into the following categories:

- Power generation optimisation
- Process and operational optimisation
- Facility layout
- Plant and equipment

The majority of emission reduction opportunities have been identified and implemented as part of the Telfer operations, resulting in a low emissions intensity of 0.0297 t $CO_2$-e per tonne of ore.

Telfer has been in operation since 1975; of the 25 initiatives, 20 are listed as implemented. Although not quantified, this, combined with Telfer's production volume, has resulted in a low emissions intensity of 0.0297 t$CO_2$-e per tonne of ore. Realised emission reductions due to the implemented opportunities to date have not been documented within this GHG EMP.

With the integration of Havieron operations to the Telfer facility, the emissions intensity is expected to increase due to the lower forecast processing volumes and plant utilisation.

Two opportunities are listed as being implemented, whilst three opportunities remain under evaluation for potential adoption, timelines for these assessments are not specified within the GHG EMP.

Appendix 1b details opportunities assessed but not adopted, the quantity of potential emissions savings for each opportunity has not been provided.

These mitigation options include:

- Renewable energy
- Electrification
- Equipment replacement
- Process optimisation

These opportunities would likely reduce emissions; however, the GHG EMP outlines several commercial and technical challenges. For several opportunities, the commercial viability is impacted by a payback period that exceeds the mine's projected lifespan of approximately 11 years, assuming no future extensions. This timeframe is consistent with the MRIWA studies, which indicate a minimum of 10 years to achieve cost-parity for a low-carbon mine, particularly in greenfield facilities utilising existing technology.

**Conclusion**

- **Emission Mitigation Measures identified:** The emission reduction opportunities identified within the GHG EMP align with typical industry best practices. Low-carbon fuels or grid connections could also be considered additional items for further investigation.
- **Adopted mitigation measures:** It is recommended that estimated emission reductions (either absolute or intensity) with each implemented measure be included for transparency in the GHG EMP.
- **Proposed GHG Emission Mitigation Measures:** The emission reduction opportunities proposed for further consideration within the GHG EMP align with typical decarbonisation opportunities for mining operations and operational gas-fired power stations. The GHG EMP specifies commercial challenges for each opportunity, it is recommended further transparency is provided, including but not limited to:
    - Estimates of potential emission reduction related to the mitigation measures.
    - Where mitigation measures are investigated and not progressed (Appendix 1b), provide further reasoning on why this decision was made.
- **Propose timelines**: It is recommended that clear timelines be established for the assessment and potential implementation of the measures currently under investigation. This includes specifying when these measures are expected to be evaluated and either implemented or formally decided against.

It is noted that several of the proposed recommendations are acknowledged by Newmont and are captured within Section 7.2, Table 9 of the GHG EMP.

### 3.2.2 Scope 3

The GHG EMP for the Telfer-Havieron operations has identified two Scope 3 emission reduction opportunities, both of which are currently being implemented:

- Source Local Policy: This policy aims to reduce emissions by sourcing materials and services locally, thereby minimising transportation-related emissions.
- Green Cement: The use of green cement reduces the embodied energy in ground supports and paste production binders. As an emerging market, the availability and impact of green cement are subject to market factors.

The emissions related to these opportunities have not yet been quantified. Table 6 of the GHG EMP provides estimates of Category 10 Scope 3 GHG emissions for the Telfer-Havieron project, highlighting the processing of sold products as the largest contributor within this category. The GHG EMP commits to further exploring methods to reduce emissions in this area. Newmont recognises this as an area for improvement, as noted in Section 7.2, Table 9 of the GHG EMP, and plans to address it in Revision 2 of the document.

While a specific Scope 3 emissions trajectory is not provided in the current GHG EMP, emissions are anticipated to decrease in proportion to production volumes, given that over 50% of Scope 3 emissions are related to downstream processing. This assumption will be further explored and validated in future revisions.

**Recommendations:**

- To address the absence of a specific Scope 3 emissions trajectory, the Telfer-Havieron project should develop a detailed forecast incorporating upstream and downstream data over the mine's lifecycle.
- The project should explore emissions reduction opportunities in downstream processing, prioritising collaboration with downstream customers.

### 3.2.3 Industry Benchmarking

The report presents two avenues for benchmarking: firstly, the current operations are benchmarked against the default emission intensity values under the Safeguard Mechanism. These values are derived from mining operations and power generation facilities across Australia and a best practice benchmark for new facilities based on international mining operations, ensuring a consistent approach.

Secondly, benchmarking is conducted against the production and emissions of other facilities. However, the challenge with this second approach lies in the uncertainty surrounding consistent system boundaries for emission calculations, which affects the accuracy of intensity comparisons based on publicly available data.

Safeguard Mechanism

The Safeguard Mechanism utilises prescribed production variables and default emissions intensities to establish a more consistent boundary for comparison in future years. These default values serve as a benchmark for industry averages and facilitate uniform assessments across different facilities.

The Clean Energy Regulator is responsible for determining facility-specific emissions intensity values following an application by the responsible emitter. These values reflect the unique emissions intensity of production at an individual facility. Currently, at the time of this review, Newmont is awaiting confirmation of the proposed production variables.

This differentiation between default, facility-specific, and best-practice emissions intensities provides a comprehensive framework for assessing and improving emissions performance in line with both national and international standards.

Section 3.2 of the GHG EMP details the proposed production variables for the Telfer operations.

Part 18 of the Safeguard Mechanism: Prescribed production variables and default emissions intensities[20] outline the emissions intensity benchmarks for the run-of-mine metal ore. The Best

[20] Safeguard Mechanism document - DCCEEW

Practice Benchmark emissions intensity is specified at 0.00247 t $CO_2$-e per tonne per unit, representing international best practices adapted to the Australian context, and applies to new facilities.

In contrast, the default emission intensity value is set at 0.00859 t $CO_2$-e per unit, which reflects the industry average emissions intensity of production as determined by the Government and published in the Safeguard Mechanism Rule.

For the Telfer operations, the calculated facility-specific emissions intensity is 0.0072 t $CO_2$-e per tonne, which is below the current industry average emissions intensity.

Part 26 of the Safeguard Mechanism: Prescribed production variables and default emissions intensities[21] outline the emissions intensity benchmarks for on-site electricity generation. The calculated Telfer operations facility-specific emissions intensity is 0.5765 t $CO_2$-e per MWh, which is slightly higher than the current industry average emissions intensity of 0.539 t $CO_2$- e per MWh. The best practice benchmark which is for new facilities is 0.236 t $CO_2$- e per MWh. No reasoning is provided within the plan for factors that contribute to this difference in emissions intensity.

These facility-specific production values are based on historical Telfer operational data and are not a forecast of future emissions intensity with the integrated Telfer-Havieron operations.

Comparison to other Facilities

The emissions intensity for the Telfer-Havieron project is detailed in Section 3.3 of the GHG EMP. The calculations include all Scope 1 emission sources, including land clearing, divided by the overall production volume. Specifically, the emissions intensities are:

- Telfer: 0.0297 t $CO_2$-e per tonne of ore
- Havieron: 0.069 t $CO_2$-e per tonne of ore
- Combined Project: 0.0416 t $CO_2$-e per tonne of ore

The benchmarking process involved identifying comparable gold mining facilities with publicly available Scope 1 emissions data. However, limitations are mentioned as most gold mines reported emissions intensity in kilograms of $CO_2$-e per ounce of gold produced. Benchmarking was conducted based on tonnes of ore processed to align with Newcrest's reporting parameters.

The analysis reveals that the combined project's emissions intensity, at 0.0416 t $CO_2$-e per tonne of ore, is higher than the average emissions intensity of comparable operations, which is 0.0340 t$CO_2$-e per tonne of ore. This deviation from industry norms is notable. As Telfer operations ramp down and cease in 2027, Havieron project-level emissions intensity is expected to increase, primarily due to operating at only 25% of plant capacity.

The Telfer mine, in isolation, has the lowest emissions intensity compared to other facilities. The smaller ore body of Havieron, combined with similar energy requirements, results in higher

[21] Safeguard Mechanism document - DCCEEW

emissions intensity. The combined project emissions intensity benchmarks are above the average of the mines presented but are expected to rise as Telfer production declines and Havieron remains.

The current assessment lacks insights into the underlying factors contributing to the disparity in emissions intensity. Havieron's increase in emissions intensity is likely due to lower production rates and reduced plant capacity utilisation. Several mines presented in the benchmarking are connected to a grid network, which can be advantageous due to the increasing penetration of renewables.

**Recommendations**

- It is recommended that the GHG EMP identify which mines are not grid-connected and distinguish between above-ground and below-ground operations.
- To enhance the benchmarking process and standardise it with other operations, the Telfer-Havieron project should update its benchmarking approach to focus on emissions intensity per ounce of gold produced, as this is the metric used by most gold mines. This adjustment will facilitate more accurate comparisons with other operations and clarify the project's performance relative to industry norms. If this is not a suitable metric due to the copper element of the mine, justify its reasoning.
- Develop an emissions intensity forecast to better understand the emissions intensity profile over time. This forecast would help identify trends and influencing factors throughout the mine's life.

**Conclusion**

The peer review concludes that the Telfer-Havieron project's emissions intensity of 0.0416 $tCO_2$- e per tonne of ore slightly exceeds the industry average, highlighting a need for further investigation into underlying factors and potential mitigation strategies, particularly as Havieron's operations are expected to increase in emissions intensity due to the combination of lower production rates and plant capacity utilisation.

# 4 Offset Integrity and Availability

In accordance with the *EPA Environmental Factor Guideline—Greenhouse Gas Emissions*, the GHG EMP offset commitments for the Telfer-Havieron project have been reviewed.

The EPA guideline requires the assessment of the following aspects:

- Offset Liability
- Offset Integrity
- Offset Availability

Offset Liability

Section 3.6 of the GHG EMP references the Safeguard Mechanism, indicating that offsets will be required if emissions exceed the set thresholds. However, the plan does not specify the expected volumes of carbon liabilities. Although Newmont has submitted its facility-specific emissions intensity value for production variables, it has not been accepted at the time of this review.

**Recommendation:** Based on the proposed production variables, Safeguard Mechanism decline percentages, and emissions forecast, it is recommended to quantify the indicative offset volumes for the project.

Offset Integrity

The GHG EMP states that Newmont will procure integrity-based offsets from verified schemes or programs, but it lacks specific details regarding integrity principles or minimum requirements.

**Recommendation**: Provide clear criteria regarding integrity considerations for procuring offsets to settle offset liabilities.

Offset Availability

The plan emphasises the importance of monitoring and managing a portfolio to ensure sufficient offsets. There is no assessment of availability due to the absence of a forecast.

**Recommendation**: Once offset liability volumes are estimated, assess market availability over the life of the mine.

**Conclusion**

The peer review has not been able to make a formal assessment relating to offset integrity and availability based on the information provided within the GHG EMP. Newmont acknowledges these gaps. Section 7.1, Table 9 of the GHG EMP specifies a commitment to address these issues in Revision 2 of the plan by providing:

- Further information on offset forecasts based on expected liabilities for all phases of the Telfer-Havieron Project and the point at which offsets are unlikely to be required.
- Likely opportunities to purchase suitable offsets throughout the life of the proposal and any barriers posed by expected liabilities.
- Criteria for selecting offsets that are ethical, sustainable, and assured.

# 5 Summary

**Basis of our Conclusion**

We believe the evidence we have obtained is sufficient and appropriate to provide a basis for conclusion regarding:

- **Emissions accounting:** The approach to emissions accounting aligns with good industry practice.
- **Demonstration of best practice:** The emission reduction opportunities assessed within the GHG EMP align with typical decarbonisation opportunities for a mine with onsite power generation. The GHG EMP specifies commercial challenges for each opportunity, it is recommended further transparency is provided, including but not limited to:
    - Estimates of potential emission reduction related to the mitigation measures.
    - Decision-making criteria are used to assess mitigation measures.
    - If the mitigation measures are investigated and not progressed, provide detailed reasoning on why this decision was made.
- **Industry benchmarking:** The peer review finds that the Telfer-Havieron project's emissions intensity of 0.0416 t $CO_2$-e per tonne slightly exceeds the industry average, necessitating further investigation and mitigation strategies, especially as emissions are expected to rise with lower production rates and plant capacity utilisation.
- **Offset integrity and availability:** The peer review has not been able to make a formal assessment relating to offset integrity and availability based on the information provided within the GHG EMP.

Newmont acknowledges the interim gaps identified within the GHG EMP Revision 1 and has outlined commitments in Table 9 to address a number of the issues highlighted in this peer review.

To address these gaps, a commitment to Revision 2 of the GHG EMP has been made, and it is recommended that a specific timeline be established for its completion. A secondary review should be conducted following the implementation of these commitments as part of Revision 2.

We have:

- Used our professional judgement to assess the GHG emission quantification methodology for the Project along with the proposed emission reduction opportunities.
- Considered credible external literature sources to inform our basis for best practice operations, and
- Ensured that the review team possessed the appropriate knowledge, skills and professional competencies.

**Use of this Peer Review Report**

This report has been prepared for Newmont to provide a conclusion on the project's demonstration of best practices, alignment with the EPA Environmental Factor Guideline—Greenhouse Gas Emissions and offset integrity and availability. It may not be suitable for any other purpose.

This peer review is based on our current understanding and knowledge, which may evolve over time, and we make no express or implied representations or warranties regarding the accuracy or completeness of the conclusions in this report. We disclaim any assumption of responsibility for any reliance on this report.

**Statement of independence, impartiality and competence**

Evolveable Consulting offers expert services in decarbonisation, sustainability, and circular economy solutions. This review was carried out independently and with the highest ethical standards. We confirm that there was no conflict of interest in this review.

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