Gourikwa Power Station

Annual Report 2025

COMPILED BY: Maureen Dlulisa

DATE: 26 May 2025

Contents

1. ENTERPRISE DETAILS

1.1 ENTERPRISE DETAILS

Enterprise Name	Eskom Holdings SOC Limited
Trading As	Gourikwa Power Station
Enterprise Registration Number	2002/015527/30
Registered Address	Rosenpark, 15 Pasista Street, Bellville
Postal Address	P O Box 10438, Dana Bay, 6510
General Telephone Number	044 606 3400
Industry Sector	Electricity Generation
Name of the Responsible Officer	Pamela Mrubata (Plant Manager)
Name of Emission Control Officer	Maureen Dlulisa
Telephone Number	021 573 6000
Cellular Phone Number	083 404 9740
Fax Number	086 538 6505
Email Address	Dlulism@eskom.co.za
After Hours Contact Details	083 404 9740
Land Use Zoning as per Town Planning Scheme	INDUSTRIAL Zone 1

1.2 FACILITY BACKGROUND LOCATION AND EXTENT OF THE PLANT

Physical Address of Premises	PetroSA Landfill Site Mossel Bay, 6500
Description of Site	Gourikwa power plant is located approximately 13km west of Mossel Bay, and approximately 1km west of the PetroSA facility, north of the N2.
Co-ordinates of Centre of Operations	Latitude: 34.164722^0 Longitude: 21.961667^0
Property Registration Number (Surveyor - General Code)	W043C051000000000399000000
Extent (km^2)	81.8908 hectares
Elevation Above Mean Sea Level (m)	190 m
Province	Western Cape
District Municipality	Garden Route District Municipality
Local Municipality	Mossel Bay Local Municipality
Designated Priority Area	N/a

Figure 1: Gourikwa in relation to its surroundings

All areas within a 5 km radius;

- North:
  - Agricultural
- East:
  - Petro SA Industrial: 1 km
  - Mossel Bay Residential 9.9 km
- South East:
  - Dana Bay Residential 6.8 km
- South:
  - Waste Disposal Site 0.5 km
  - Transportation: N3 1.2 km
  - Agricultural > 5km
- West:
  - Agricultural

1.3 ATMOSPHERIC EMISSION LICENSE AND OTHER AUTHORISATIONS

Name of Licensing Authority	Garden Route District Municipality
Atmospheric Emission License Number	WCED013
Date that AEL was Issued	**17 May 2023**
Type of AEL	Full
Review Date	Annually on a date determined by Licensing Authority
Renewal Application Date	30 April 2028

2. NATURE OF THE PROCESS

2.1 LISTED ACTIVITY

Listed Activity No.	Category of Listed Activity	Sub-category of Listed Activity	Listed Activity Name	Description of Listed Activity
1	Category 1	Subcategory 1.2	Liquid fuel combustion installations	Liquid fuels combustion installations used primarily for steam raising or electricity generation.
2	Category 2	Subcategory 2.4:	Storage and Handling of Petroleum Products.	Petroleum product storage tanks and product transfer facilities, except those used for liquefied petroleum gas.

2.3 UNIT PROCESSES

Unit Process	Function of Unit Process	Batch or Continuous Process
Unit 11	Power Generation 150MW	Intermittent
Unit 12	Power Generation 150MW	Intermittent
Unit 13	Power Generation 150MW	Intermittent
Unit 21	Power Generation 150MW	Intermittent
Unit 22	Power Generation 150MW	Intermittent
Fuel storage	Fuel storage	Continuous

3. TECHNICAL INFORMATION

3.1 RAW MATERIALS USED

Regulated Raw Materials		
Raw Material Type	**Maximum Permitted Consumption Rate (Quantity)**	**Units (quantity/period)**
Diesel	40 000	Litre/hour/unit
Non-regulated Raw Materials		
Raw Material Type	**Maximum Permitted Consumption Rate (Quantity)**	**Units (quantity/period)**
Environmentally friendly solvent	100L mixed with 400L water per unit	L/Month/unit

* Regulated raw materials refers to those materials when increased or decreased may result in the change of air emissions output.

* Non-regulated raw materials refer to those materials when increased or decreased may not result in any change of air emissions output.

Materials for Energy Source	Actual Consumption Rate (Quantity)	Units (quantity / period)	Max Sulphur Content of Fuel (%)	Max Ash Content of Fuel (%)
Diesel	40 000	Litres/hour/unit	0.05	Trace amounts

3.2 APPLIANCES AND ABATEMENT EQUIPMENT CONTROL TECHNOLOGY

Appliances				Air Pollution Control Technology							
Associated Source Code/ Stack I.D.	**Appliance / Process Equipment Number**	**Appliance type/ Description**	**Appliance Serial Number**	**Appliance Manufacture Date**	**Product Name and Model**	**Technology Type**	**Commission Date**	**Date of Significant Modification /Upgrade**	**Design Capacity**	**Permitted Minimum Control Efficiency (%)**	**Permitted Minimum Utilization (%)**
Unit 11	11MBM12	Low NO_x burners	N/A	Unknown	CEMS Analyzer	(Siemens)	2007	n/a	N/A	NOx emissions < 250 mgNm[31]	100%
Unit 12	12MBM12	Low NO_x burners	N/A	Unknown	CEMS Analyzer	(Siemens)	2007	n/a	N/A		100%
Unit 13	13MBM12	Low NO_x burners	N/A	Unknown	CEMS Analyzer	(Siemens)	2007	n/a	N/A		100%
Unit 21	21MBM12	Low NO_x burners	N/A	Unknown	CEMS Analyzer	(Siemens)	2008	n/a	N/A		100%
Unit 22	22MBM12	Low NO_x burners	N/A	Unknown	CEMS Analyzer	(Siemens)	2008	n/a	N/A		100%

[1] As per license

4. ATMOSPHERIC EMISSIONS:

4.1 POINT SOURCE PARAMETERS

Point Source code/ stack I.D.	Source name	Latitude (decimal degrees)	Longitude (decimal degrees)	Height of Release Above Ground (m)	Height Above Nearby Building (m)	Diameter at Stack Tip / Vent Exit (m)	Actual Gas Exit Temperature (°C)	Actual Gas Volumetric Flow (m^3/hr)	Actual Gas Exit Velocity (m/s)
1	Stack 11	34.166641	21.961986	30	18	6	560	1200	40
2	Stack 12	34.166399	21.962847	30	18	6	560	1200	40
3	Stack 13	34.166283	21.963260	30	18	6	560	1200	40
4	Stack 21	34.167331	21.959516	30	18	6	560	1200	40
5	Stack 22	34.167211	21.959926	30	18	6	560	1200	40

4.2 FUGITIVE EMISSIONS (AREA AND OR LINE SOURCES)

The fuel storage tanks vent to the atmosphere. No fugitive monitoring is conducted on site. The Environmental Management Plan is however in place, which guides the processes and procedures to be taken in the event of a leak. Any leaks are logged, managed and reported.

4.3 EMERGENCY INCIDENTS

No incidents occurred during the period under review.

4.4 EMISSIONS

Table 4.4.1.General overview of emissions Gourikwa Power Station - 2022/2023 to 2024/2025

Year	NO_X Total (Tons/annum)	PM Total (Tons/annum)	SO_2 Total (Tons/annum)	CO_2 Total (Tons/annum)
2024/2025	**840.582**	**0**	**4.13**	**846 146. 498**
2023/2024	**2072.258**	**0**	**9.309**	**1671361.70**
2022/2023	**1603.148**	**0.008**	**7.418**	**1370668.55**

Table 4.4.2. Annual Figures of emissions, energy sent out and fuel usage at Gourikwa Power Station 2022/2023 – 2024/2025

Year	Energy Sent Out (GWh)	Diesel used (tons)
2024/2025	**1041.458**	**263 267.61**
2023/2024	**2038.316**	**514 198.89**
2022/2023	**1681.217**	**425 567.226**

Table 4.4.3. Pollutant Emission Trends for 2024/2025 financial year

Financial Year 2024/2025						
Month	**NO_x (tons) Calculated Values**	**SO_2 (tons) Calculated Values**	**CO_2 (tons) Calculated Values**	**PM (tons) Measured Values**	**Diesel consumed (tons)**	**GWh Sent Out**
Apr 202	27.26	0.111	22 811. 075	0	7 097.373	27.420
May 2024	6.185	0.022	5 118. 855	0	1 592.666	5.978
June 2024	66.102	0.171	52 763. 885	0	16 416.805	64.946
July 2024	6.446	0.029	5 117. 605	0	1 592.277	6.270
Aug 2024	7.112	0.014	5 501. 683	0	1 711.778	6.752
Sept 2024	12.814	0.401	104 231. 250	0	32 430.215	129.011
Oct 2024	26.692	0.094	22 610. 855	0	7 035.077	28.174
Nov 2024	39.762	0.124	38 570. 537	0	12 000.727	47.549
Dec 2024	133.038	0.731	124 814. 483	0	38 834.423	155.403
Jan 2025	107.724	0.818	128 653. 063	0	40 028.748	157.259
Feb 2025	108.851	0.397	148 776. 050	0	46 289.757	183.869
Mar 2025	183.270	1.218	187 177. 157	0	58 237.768	228.827
Totals	**840.582**	**4.13**	**846 146. 498**	**0**	**263 267.61**	**1041.458**

The station reports on calculated CO_2 values for consistency otherwise SO_2, PM and NO_x are measured as reported in monthly emission reports.

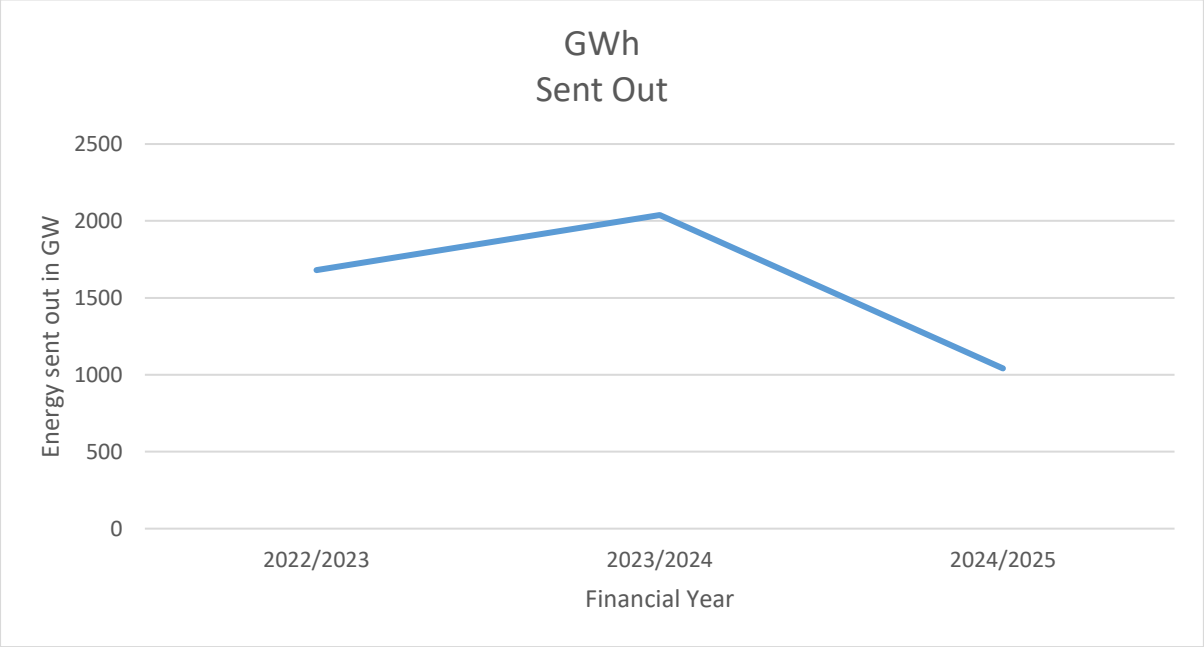

Figure 1. Annual GWh sent out between 2021 and 2024 for Gourikwa Power Station

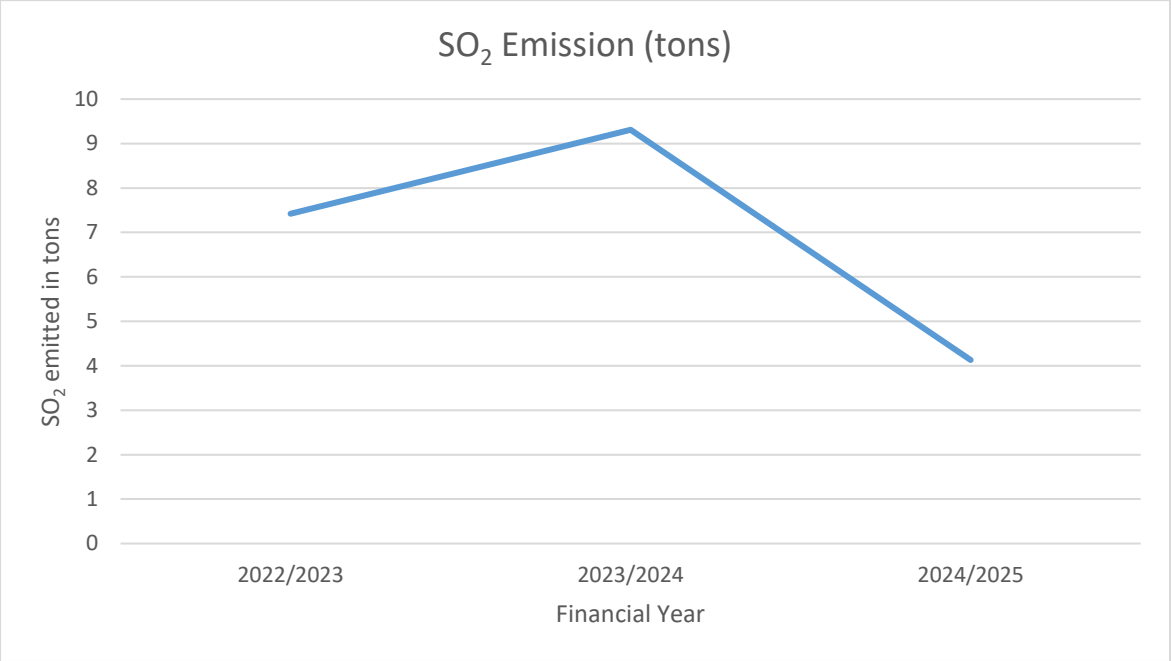

Figure 2. Annual SO_2 Emissions in tons between 2021 and 2024 for Gourikwa Power Station

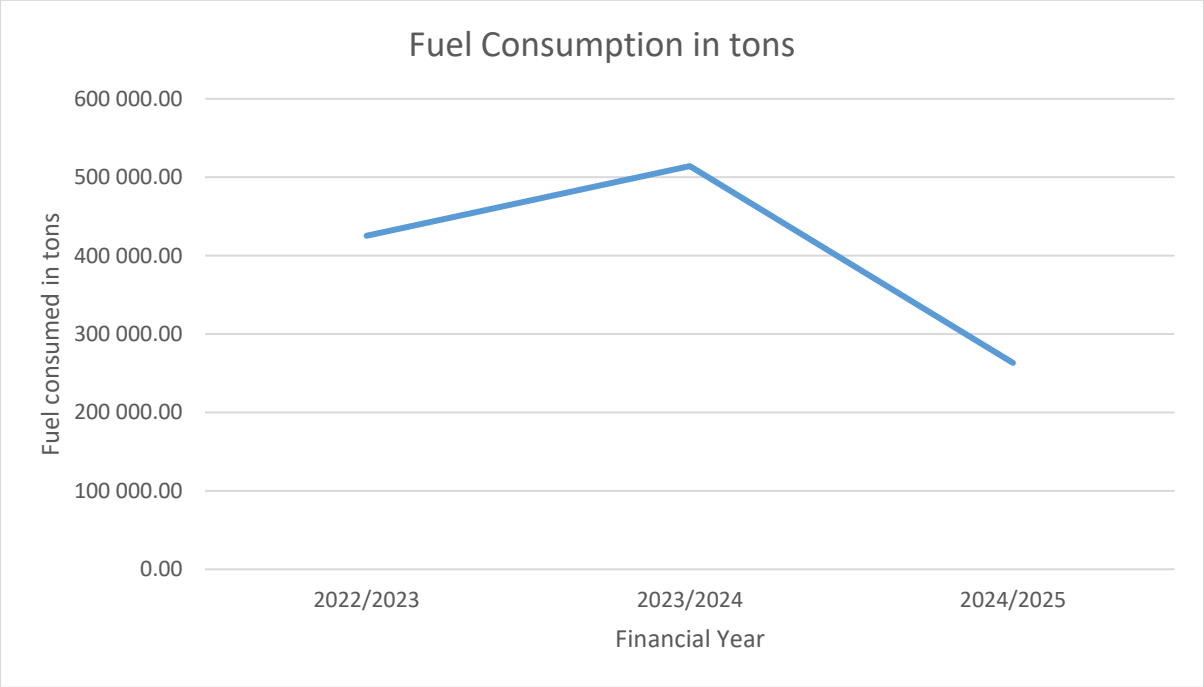

Figure 3. Annual fuel usage in tons between 2021 and 2024 for Gourikwa Power Station

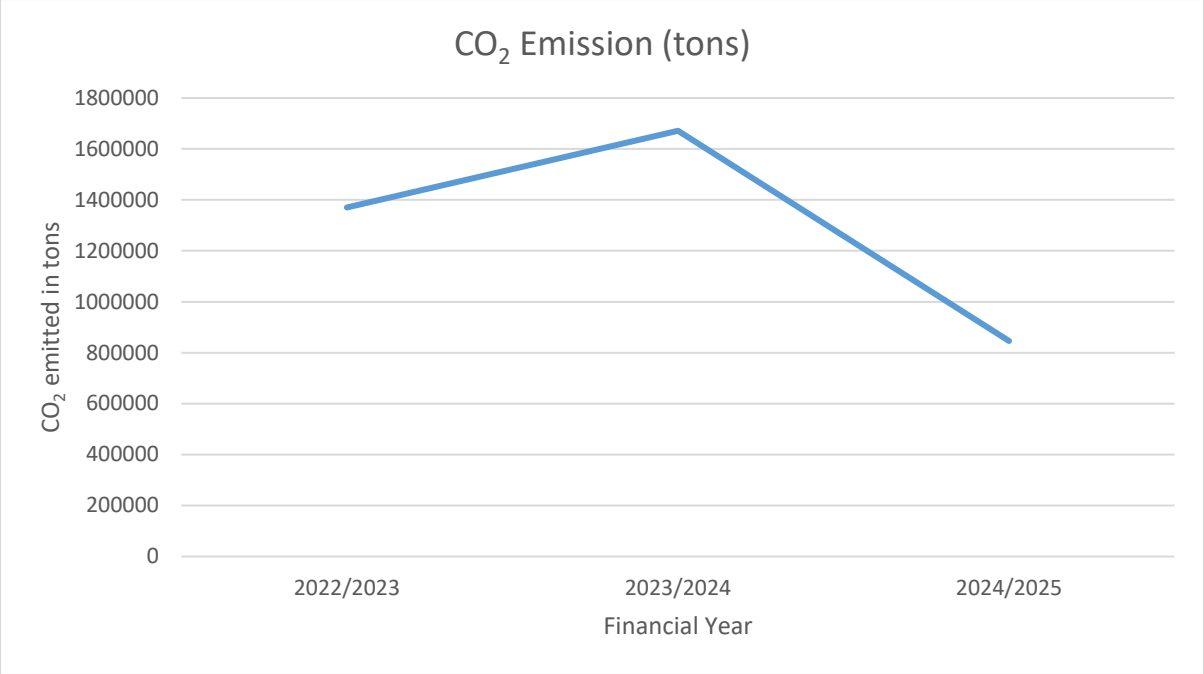

Figure 4. Monthly CO_2 Emissions in tons between 2021 and 2024 for Gourikwa Power Station

5. IMPACT OF ENTERPRISE ON THE RECEIVING ENVIRONMENT

5.1 ANALYSIS OF EMISSIONS' IMPACT ON HUMAN HEALTH

The Ambient Monitoring Station is located at the Garden Route District Municipal offices. Monthly reports are received, and analysis of emissions is done.

5.2 ANALYSIS OF EMISSIONS' IMPACT ON THE ENVIRONMENT

No analysis conducted during 2023/24 financial year period.

6. COMPLAINTS

No complaints were received in the past financial year. No complaints have been received for the last five years.

7. CURRENT OR PLANNED AIR QUALITY MANAGEMENT INTERVENTIONS

No planned air quality management interventions for the foreseeable future.

8. COMPLIANCE AND ENFORCEMENT HISTORY

Eskom Gourikwa Power Station is within AEL limits for Sulphur Dioxide, Oxides of Nitrogen Particulate Matter. The station still calculates Carbon Dioxide emissions.

No air quality related enforcement actions have been taken against Gourikwa Power Station.

8.1 CONTINUOUS EMISSION MONITORING SYSTEM

All 5 units are internally calibrated, annually, by station technicians and every second year calibrated by an external service provider. The last external calibration has recently been done, and we are awaiting certificates.

8.2 COMPLIANCE AUDIT REPORT(S):

No compliance audit was undertaken in period under review.

8.3 MAJOR UPGRADES

No major upgrades were undertaken in period under review.

8.4 ABATEMENT EQUIPMENT CONTROL TECHNOLOGY AVAILABILITY (%)

The abatement technology (low NOx burners) was available 100% of the time while the units were in generating mode.

On average, 95% of the hourly values from the CEMS were valid in the past financial year.

Monitoring data availability

Table 4.4.4 General oversight of monitoring data availability

	Unit 11	Unit 12	Unit 13	Unit 21	Unit 22
PM	8759	8530	8760	8760	8760
SO_2	8759	8530	8760	8760	8760
NOx	8466	8212	8644	8759	8760
CO	8759	8530	8760	8760	8760

CEMS at Gourikwa Power Station, for the period 2024/2025 in terms of the number of full hours that valid results were obtained for the CEMS is approximately 95% of the time.

8.5 LEAK DETECTION AND REPAIR PROGRAMME

The station has not had any major fuel leaks that required reporting in terms of the Leak Detection and Repair Programme or legislation. Plant walk downs are performed at the start of every shift as per procedure (Weekly Inspection and Routine Operation of Power Station, Doc No.: OP-UCA-001r).

8.6 BTEX MONITORING

The station is required, in terms of the Atmospheric Emission Licence condition 7.6.2, to conduct a 2-week sampling regime in April and October and to submit the report to the authorities. In the period under review in October 2024, no BTEX monitoring was undertaken.

8.7 NAEIS REPORTING

Eskom has reported Gourikwa Power Station’s emissions as per the NAEIS system requirement for year 2024 and is currently busy with the 2025 submission.

Hoping the above will meet your satisfaction. For any queries please do not hesitate to contact Maureen Dlulisa (021 573 6162).

Yours sincerely

_____

Pamela Mrubata
GOURIKWA POWER STATION

10. FORMAL DECLARATIONS

10.1 ANNEXURE A: DECLARATION OF ACCURACY OF INFORMATION

Please sign a written declaration indicating that the contents of annual report is true reflection of information provided.

DECLARATION OF ACCURACY OF INFORMATION

I, **Pamela Mrubata**, Plant Manager for **Gourikwa Power Station,** hereby declare that the information as contained in the above annual report is true and accurate.

Signature:----------

Date:----------