

Mandlenkosi Mahlalela
 Department of Economic Development, Environment & Tourism
 Private Bag X11219
 Nelspruit
 1200

Date:
 30 May 2018

Enquiries:
 Livhuwani Tshilate
 017 615 2317

Ref: 17/4/AEL/MP312/11/09

Dear Mandlenkosi Mahlalela

KRIEL POWER STATION'S ANNUAL EMISSIONS REPORT FOR FY 2017/18

This serves as the annual report required in terms of Section 7.6 in Kriel Power Station's Atmospheric Emission License, as well as in terms of other reporting requirements listed in the Minimum Emission Standards. The emissions are for Eskom's 2017/18 financial year which is from 1 April 2017 to 31 March 2018. Verified emissions of particulates, SO₂ and NO_x as measured by installed CEMS as well as calculated emissions for CO₂ and N₂O are included.

Name, description and reference number of plant as specified in the AEL:

Name of facility	Eskom Holdings SOC Limited- Kriel Power Station
Description of facility	Coal fired electricity generation
Reference number of plant	Ref. 17/4/AEL/MP312/11/09

Emission Trends:

The emissions in the table below are that of the 2017/2018 financial year.

Table 1. General oversight of emissions at Kriel Power Station 2017/2018

Power Station	Coal-fired emissions (tons/annum)	Fuel-oil emissions (tons/annum)	Total (tons/annum)
Kriel Power Station	CO ₂ [REDACTED]		
	N ₂ O: 213.195	N ₂ O: not calculated	N ₂ O: 213.195
	PM: 6131.2	PM: not calculated	PM: 6131.2
	SO ₂ : 111 720.8	SO ₂ : 17.14	SO ₂ : 111 737.94
	NO _x : 60 175	NO _x : not calculated	NO _x : 60 175

CO₂ figures removed due to commercial sensitivity

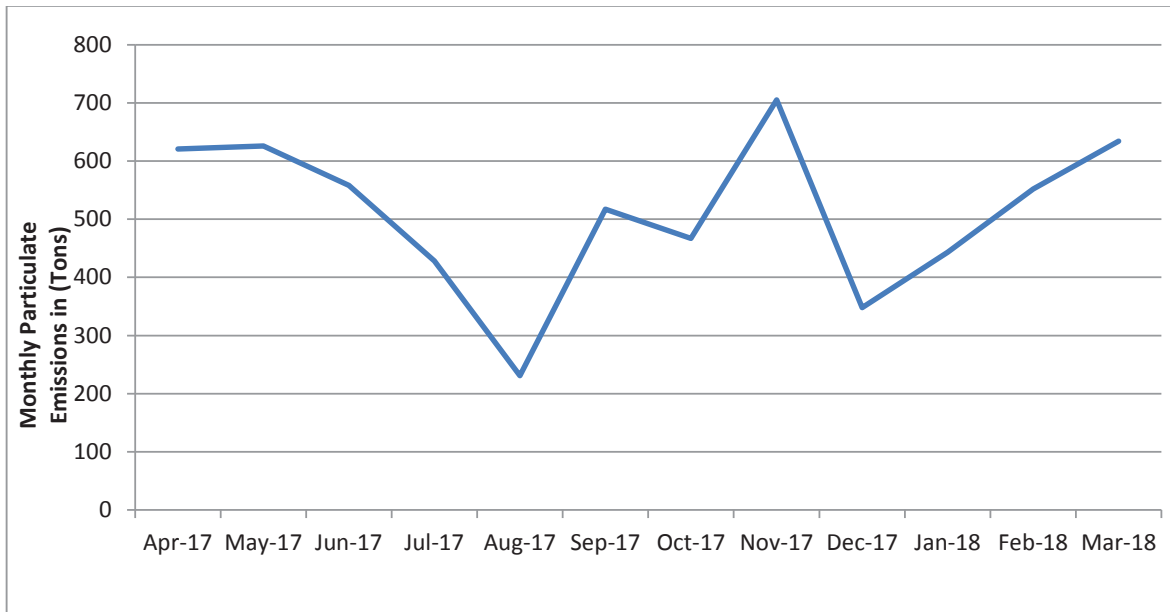


Figure 1. Monthly Particulate Emissions in tons from Kriel Power Station 2017/2018

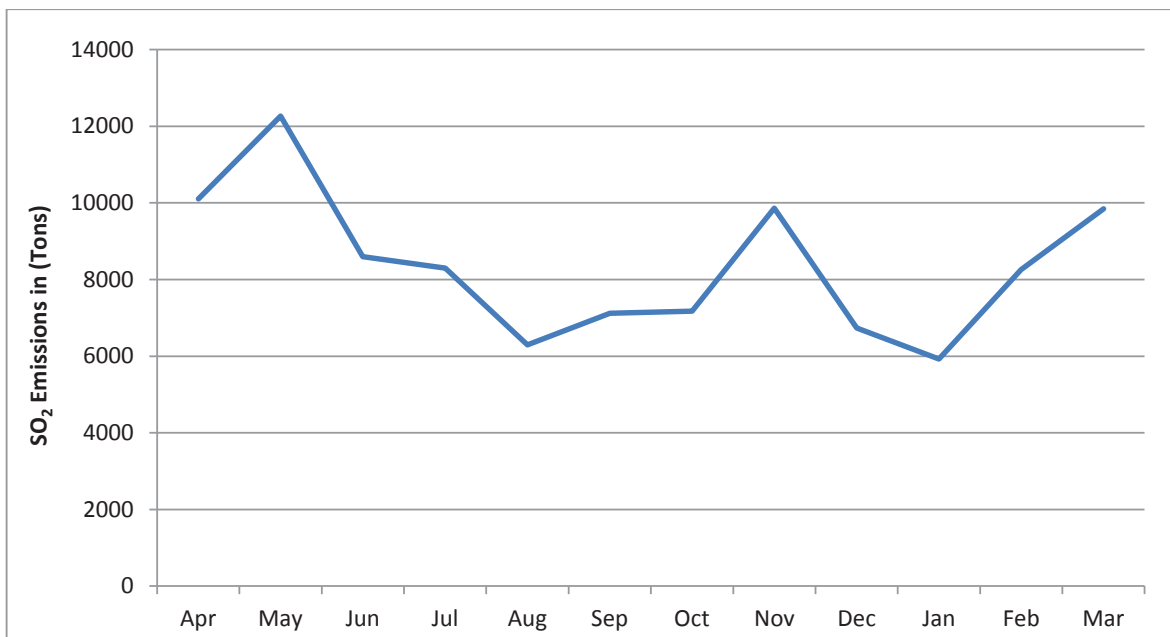


Figure 2. Monthly SO₂ emissions in tons from Kriel Power Station 2017/2018

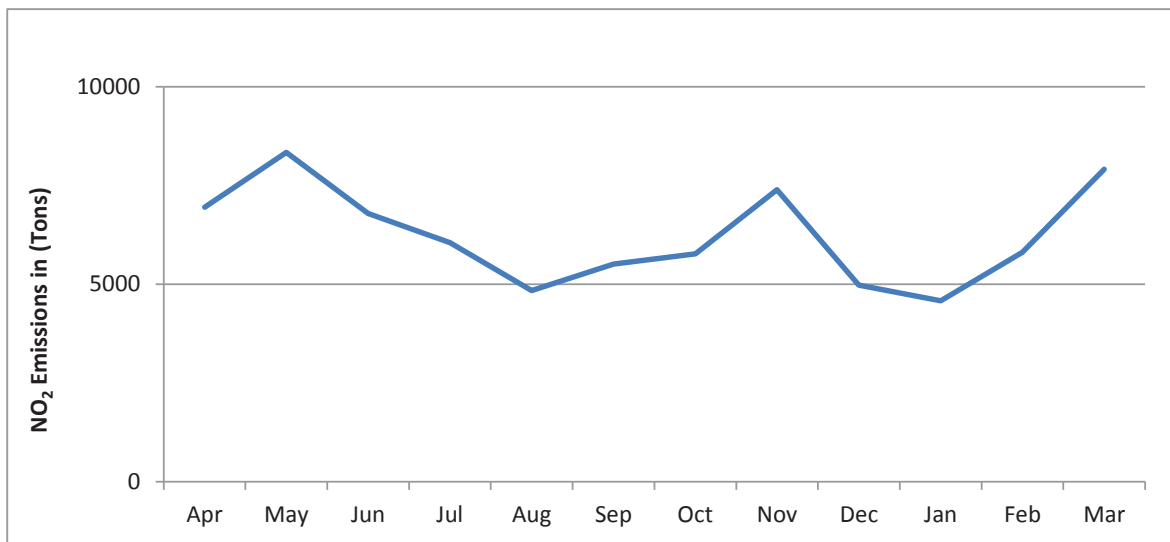


Figure 3. Monthly NO₂ emissions in tons from Kriel Power Station 2017/2018

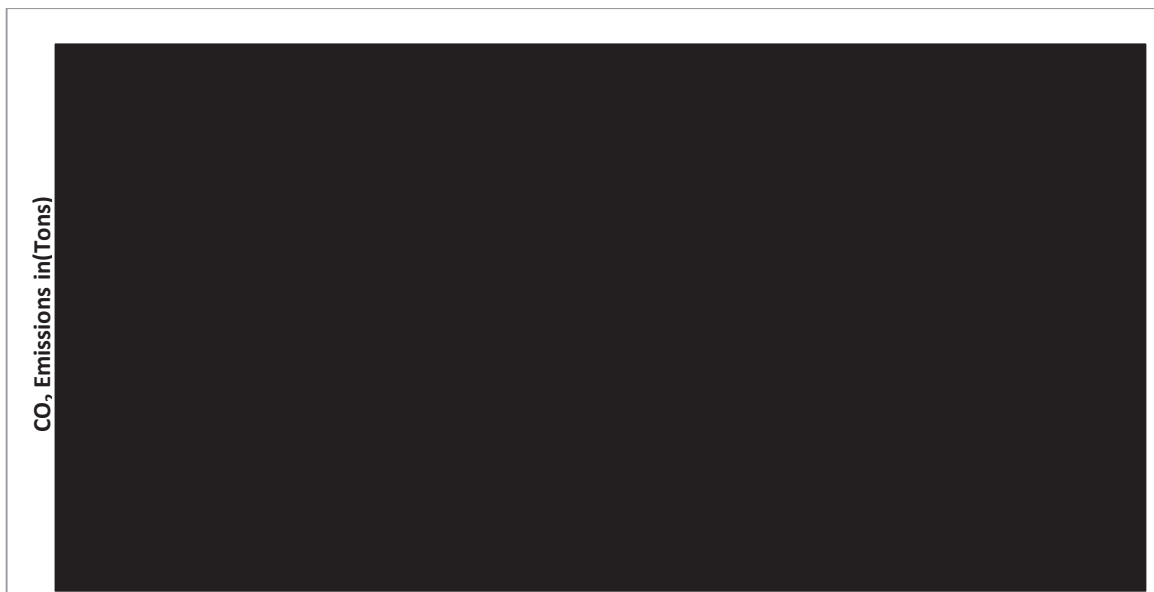


Figure 4. Monthly CO₂ emissions in tons from Kriel Power Station 2017/2018

CO₂ removed due to commercial sensitivity

Monthly per pollutant against the respective emission standards are reported to your offices on a monthly basis in the monthly emission reports.

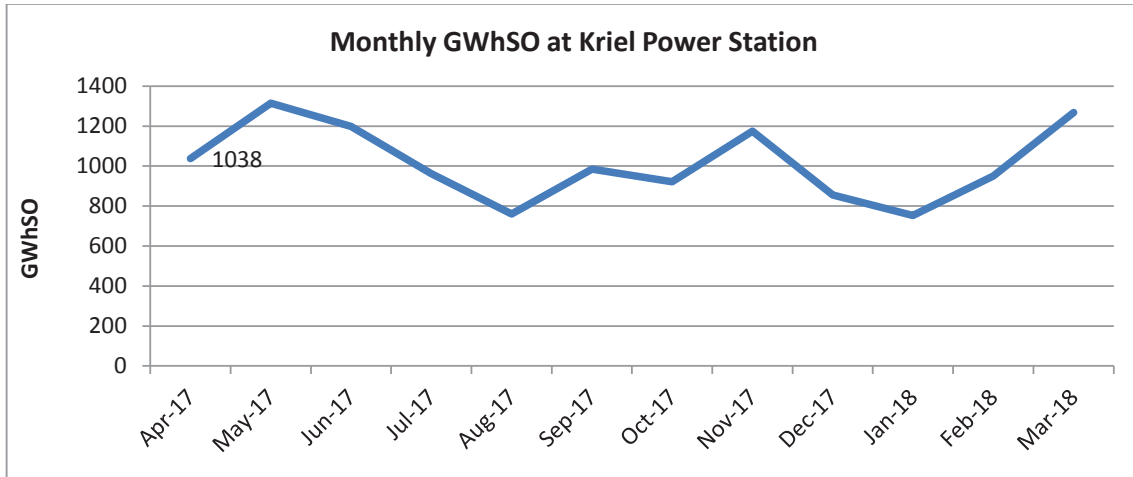


Figure5. Monthly Energy sent out in GWh at Kriel Power Station 2017/2018

Monitoring data availability

Table 2. Monitoring Data availability for Kriel Power Station 2017/2018

Pollutants	North Stack	South Stack
PM	94.3%	98.5%
SO ₂	84.1%	79.9%
NOx	85.3%	79.1%

In terms of Section 17 and 18 of the Minimum Emissions Standards, it is a requirement that Kriel Power Station reports on the availability of its continuous emission monitors (PM, SOx and Nox).

The monitor availability on the South Stack was below 80% for NOx and SOx due to the defect which was experienced on the gas analyzer from April to July 2017. The defective monitors were eventually repaired in July 2017. See attached notification letter for more details.

Compliance Audit Report(s):

Relative Particulate Emissions audit was conducted by Sizwe-Ntsaluba-Gobodo (SNG) in November 2017; and there were no findings raised.

Major upgrades projects:

There were no planned projects for execution during 2017/18 financial year.

Greenhouse gas emissions:

The CO₂ and N₂O emissions have been outlined in the tables and graphs above.

Results of spot measurements or correlation tests:

Table 3. Overview of dates of last conducted CEMS verification tests for PM, SO₂ and NOx

Verification Test Date	Stack
07/09/2017 – 11/09/2017	North Stack
21/12/2016 – 19/02/2017	South Stack

Kriel Power Station contracted Inthuu Measurements CC to perform North and South Stack parallel tests for gaseous emissions monitors and correlation measurements for particulate matter monitor. The aforementioned measurements were successfully conducted (refer to the attached correlations and parallel measurements reports).

An explanation of all instances where minimum emission standards were exceeded:

All average exceedances are reported and outlined in the monthly emission reports sent to your offices. A summary of the NEMA Section 30 incidents reported to the DEA has been included below.

Table 4. Overview of NEMA Section 30 incidents for 2017/18 financial year

Stack	Exceedance dates [from – to]	Reason for exceedance	Remediation measure and effectiveness
South Stack	03/10/2017 - 11/10/2017	The unavailability of mills due to PF leaks on the conveying lines at unit 6	<ul style="list-style-type: none"> -Establishment of a leak test quality control worksheet for units returning from outages -Shut down of unit 6 and repairing the mills PF leaks. -Load losses taken -Measures effective, the south stack emissions trended within the limit after unit light up on the 11th of October 2017.
South Stack	19/11/2017 – 30/11/2017	Castlet MCS II controller malfunction	<ul style="list-style-type: none"> - Undertaking Castlet II controller checks - De-loading demag compressor - Taking of load losses - Repair and optimize defective Castlet II controller - Measures effective, emissions averaged below 70mg/Nm³ after the repair
North Stack	23/01/2018 – 05/02/2018	Fischer Control Valve Malfunction	<ul style="list-style-type: none"> -Replacement of the Fischer Control Valve -Repair of the thermocouple on the burner -Replacement of SO₃ dosing pump -Keep the spare SO₃ pump as a stock item -Include Fischer Control Valve as spare (stock item) -Taking of load losses at Unit 3

NAEIS reporting:

Kriel Power Station submitted its annual report on the NAEIS system by the 31st of March 2018.

The rest of the information demonstrating compliance with the emission license conditions is supplied in the monthly emission reports sent to your office.

Hoping the above will meet your satisfaction.

Yours sincerely

A handwritten signature in black ink, appearing to read 'Gersh Bonga', with a horizontal line underneath. To the right of the signature, the initials 'P.D.' are written.

Gersh Bonga
KRIEL POWER STATION GENERAL MANAGER