

Mr V Mahlangu  
 Air Quality Officer  
 Nkangala District Municipality  
 Private Bag X 437 or 2032  
 Middelburg  
 1050

Date:  
 04 May 2018

Enquiries:  
 Justice Ramagoma  
 013 296 3013

Ref: R/ENV200-38

Dear Mr. Mahlangu

**HENDRINA POWER STATION'S ANNUAL EMISSIONS REPORT FOR FY 2017/2018**

This serves as the annual report required in terms of Section 7.6 in Hendrina Power Station's Atmospheric Emission License (17/4/AEL/MP/313/11/16), as well as in terms other reporting requirements listed in the Minimum Emission Standards. The emissions are for Eskom's 2017/2018 financial year, which is from 1 April 2017 to 31 March 2018. Verified emissions of particulates, as measured by installed CEMS and SO<sub>2</sub> and NO<sub>x</sub> (as NO<sub>2</sub>), as calculated, are also included.

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

Name of facility	Eskom Holding SOC Limited: Hendrina Power Station
Description of facility	Power Station- Electricity Generation: Solid fuel combustion for steam rising
Reference number of plant	17/4/AEL/MP/313/11/16

**Emission Trends:**

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

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

Power Station	Coal-fired emissions (tons/annum)
Hendrina Power Station	CO <sub>2</sub> : [REDACTED]
	N <sub>2</sub> O: 175.63 Tons
	PM: 1 273 326.69 Tons
	SO <sub>2</sub> : 83 287.74 Tons
	NO <sub>x</sub> : 38 123.06 Tons

CO2 removed due to commercial sensitivity

PM: Particulate matter (PM) is a by-product of coal combustion, in the form of fly ash emitted through stacks.

SO<sub>2</sub>, NO<sub>x</sub>, and CO<sub>2</sub>, N<sub>2</sub>O are by-products of coal combustion which are released as flue gasses through stacks.

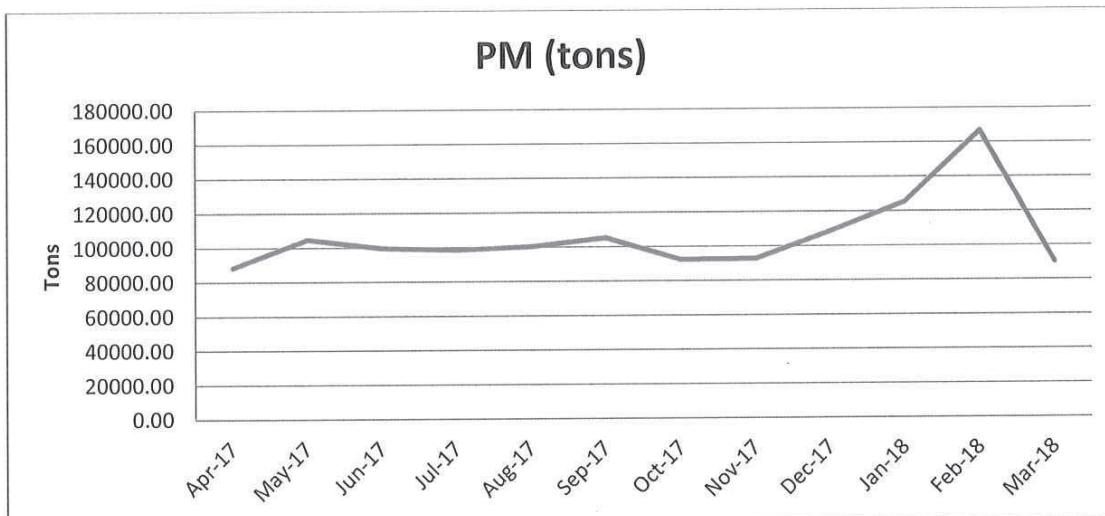


Figure 1. Monthly Particulate Emissions in tons from Hendrina Power Station 2017/2018

Please note: Gaseous emissions, in particular, are largely dependent on the power generated by the power station, and thus the amount of coal burnt.

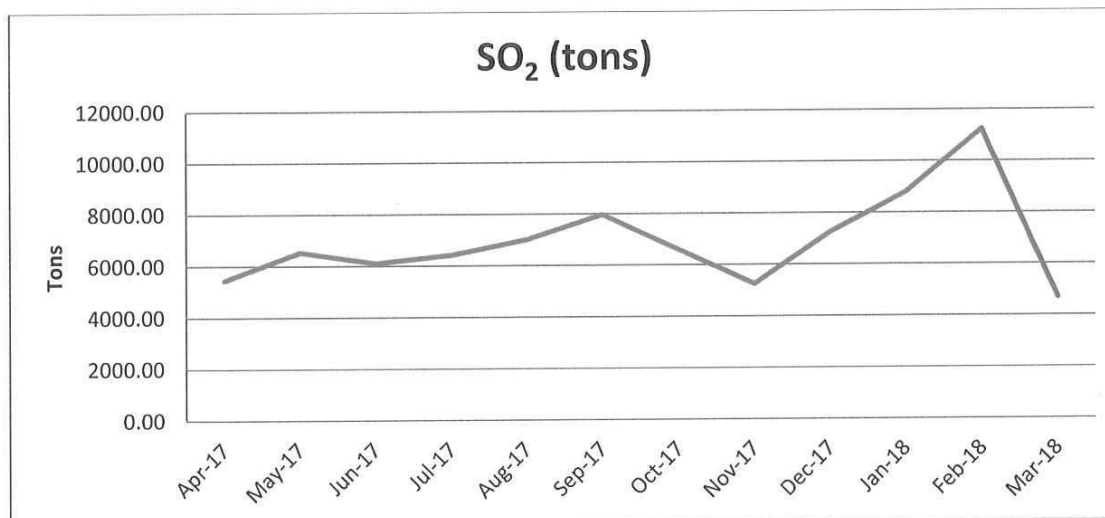


Figure 2. Monthly SO<sub>2</sub> Emissions in tons from Hendrina Power Station 2017/2018

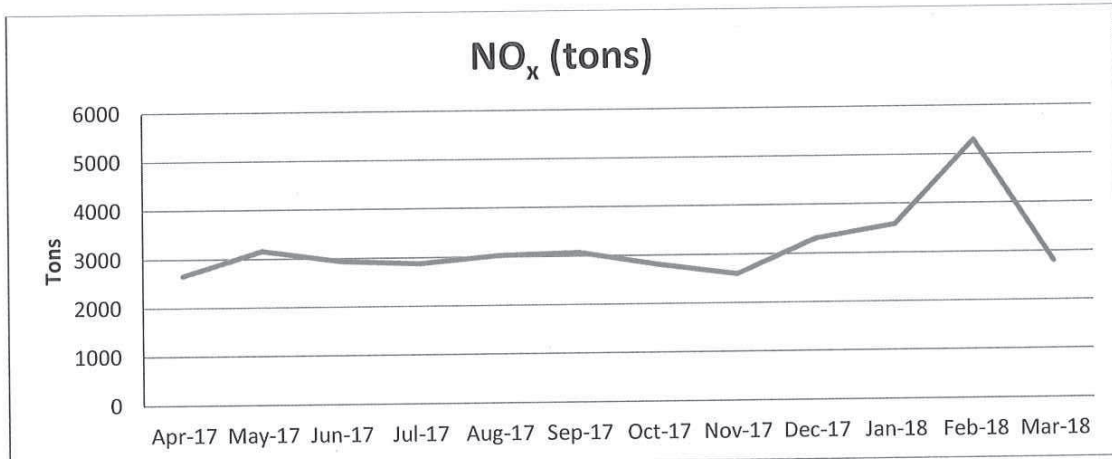


Figure 3. Monthly NO<sub>2</sub> Emissions in tons for Hendrina Power Station 2017/2018



Figure 4. Monthly CO<sub>2</sub> Emissions in tons from Hendrina Power Station 2017/2018  
CO<sub>2</sub> removed due to commercial sensitivity

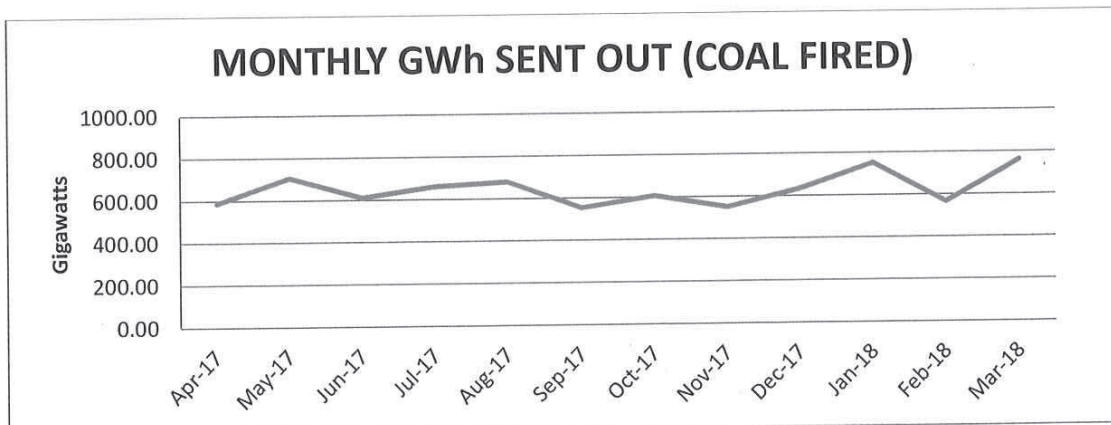


Figure 5. Monthly Energy sent out in GWh at Hendrina Power Station 2017/2018

Figures showing compliance with the daily average emission limits of the respective pollutants have been presented to you in the monthly emission reports sent to your offices.

**Annual Monitoring data availability: for CEMS**

Annual average of emissions monitors availability:

North Stack (unit 1 to 5)	Particulate Matter	SO <sup>2</sup>	NO <sub>x</sub>	CO	CO <sub>2</sub>	O <sub>2</sub>	H <sub>2</sub> O	Pressure
Availability (%)	100	96	96	2	19	19	31	98

South Stack (unit 6 to 10)	Particulate Matter	SO <sup>2</sup>	NO <sub>x</sub>	CO	CO <sub>2</sub>	O <sub>2</sub>	H <sub>2</sub> O	Pressure
Availability (%)	100	95	100	100	96	40	100	100

Notifications regarding monitor unavailability during the year have been sent to your Offices during the respective month/s as part of the usual monthly reporting process. Monitor availability status is also being included in monthly reports.

**Compliance Audit Report(s):**

An external audit was conducted for financial year 2017/2018 by Zitholele Consulting, report attached.

**Major upgrades projects:**

No upgrade was done.

**Greenhouse gas emissions:**

Greenhouse gas emissions as CO<sub>2</sub> and N<sub>2</sub>O have been reported on in the above sections. These have been calculated.

**Results of spot measurements or correlation tests:**

- The most recent correlation test for the PM emissions on both North and South Stack was performed in March 2017. Report attached.
- The most recent parallel testing for gaseous emissions on both North and South Stack was performed in March 2018. Report attached.

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

Table 4. Overview of daily average limit exceedances for 2017/2108 financial year

Exceedance	Stack/unit and pollutant	Exceedance date	Reason for exceedance	Remediation measure and effectiveness
1	North Stack: SO <sub>2</sub>	16/08/17 - 16/08/17	Monitor failure	Monitors were serviced
2	North Stack: NO <sub>x</sub>	31/08/17 - 31/08/17	Monitor failure	Monitors were serviced
3	South Stack: SO <sub>2</sub>	15/08/17 - 16/08/17	Monitor failure	Monitors were serviced
4	North Stack: SO <sub>2</sub>	18/09/17 - 18/09/17	Monitor failure	Monitors were serviced

Your office was notified (as per correspondence on 4 October 2017). The main reason was outstanding maintenance of gaseous monitors, which was resolved after the stack lifts were serviced. Since then, monitor reliability and availability have improved to above 85% availability daily/monthly. The measured exceedances were identified to be caused by monitor problems. As such there were no actual exceedances of the respective pollutant limits.

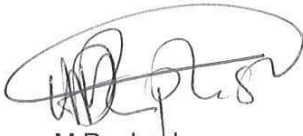
**NAEIS reporting:**

Hendrina Power Station submitted its annual report on the NAEIS system by the 31 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 'M Raphasha', enclosed within a hand-drawn oval.

M Raphasha  
**GENERAL MANAGER: HENDRINA (ACTING)**