

Mr. Stanford Mofore
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Date:
25 May 2021

Enquiries:
Ms. Simthandile Nhlapo
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Ref: NDM/AEL/MP312/11/07

Dear Mr Mofore

DUVHA POWER STATION'S BI-ANNUAL EMISSIONS REPORT FOR FY 2020/21

This serves as the bi-annual report required in terms of Section 7.2.1 in Duvha Power Station's Atmospheric Emission Licence. The emissions are from 01 October 2020 to 31 March 2021. Verified emissions of particulates as measured by installed CEMS and SO₂ and NO_x (as NO₂) as calculated, are also included.

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

Name of facility	Eskom Holdings SOC Limited
Description of facility	Duvha Power Station
Reference number of plant	NDM/AEL/MP312/11/07

Emission Trends:

The emissions in the table below are that of the October 2020 – March 2021 bi-annual period.

Table 1. General oversight of emissions at Duvha Power Station 201920/20201

Power Station	Coal-fired emissions (tons/bi-annum)	Fuel-oil emissions (tons/bi-annum)		Total (tons/bi-annum)
		FO 150	Catlight	
Duvha Power Station	PM: 1790.10	PM: 0		PM: 1790.10
	SO₂: 37 568.11	SO₂: 418.46	SO₂: 3.44	SO₂: 37 990.01
	NO_x: 23 394.80	NO_x: 0		NO_x: 23 394.80

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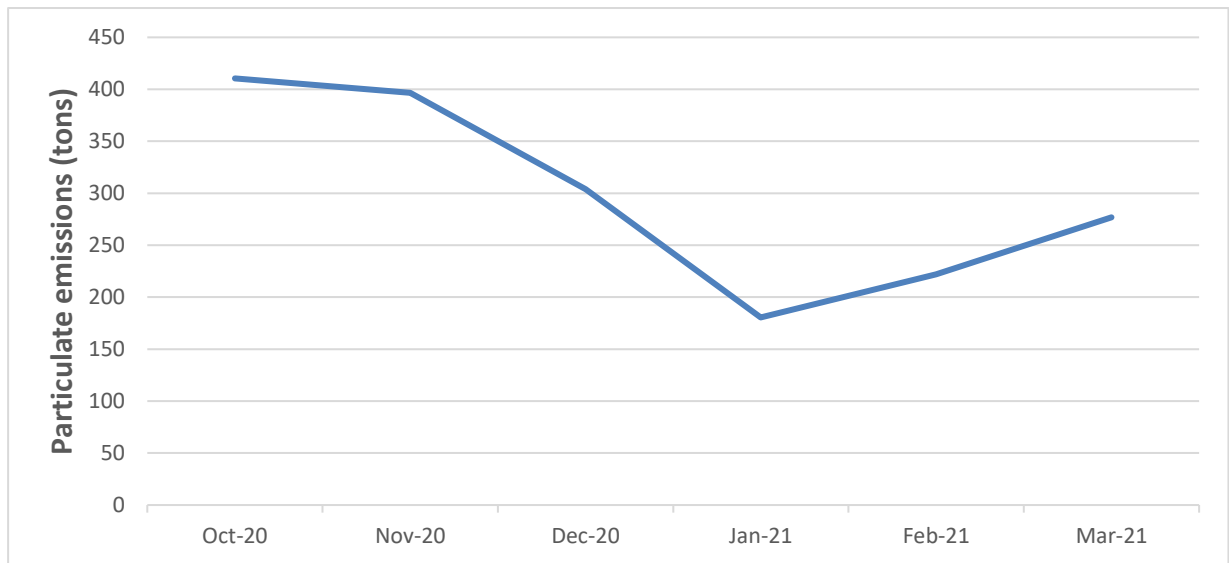


Figure 1. Verified Monthly Particulate Emission in tons from Duvha Power Station October 2020-March 2021.

Please note: Gaseous emissions, in particular, are largely dependent on the power generated by the power station, and thus the amount of coal burnt. The bi-annual calculated emissions figures are still subject to year-end verifications and may change.

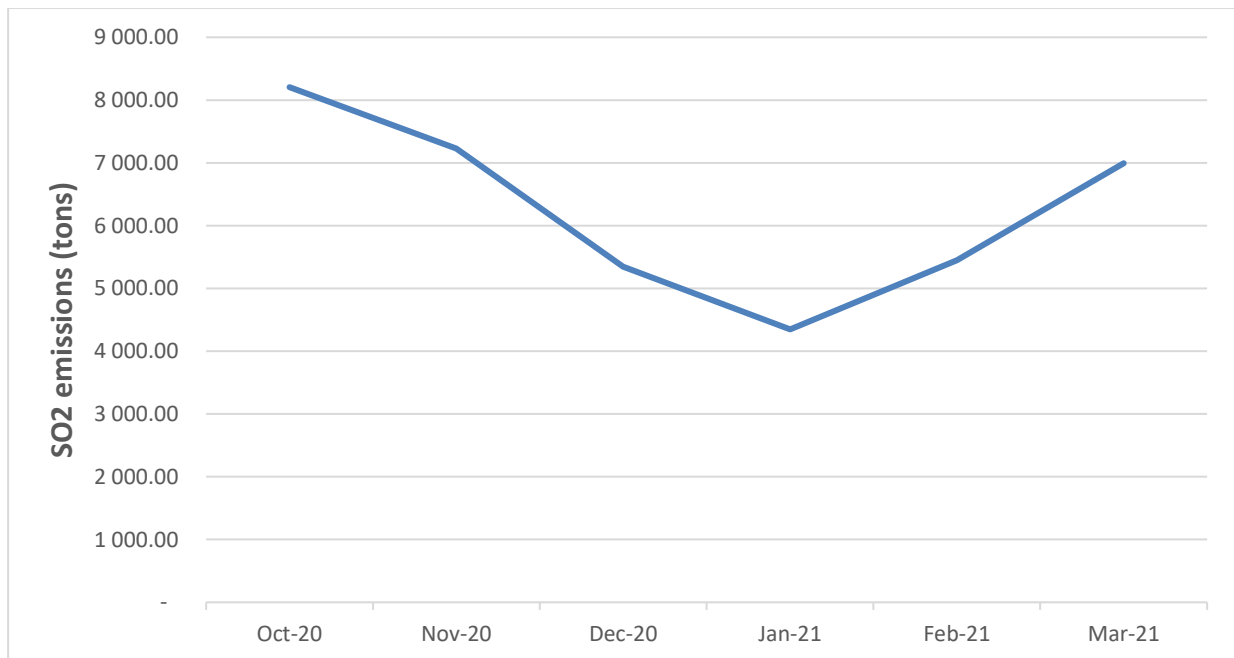


Figure 2. Calculated Monthly SO₂ Emissions in tons from Duvha Power Station October 2020-March 2021.

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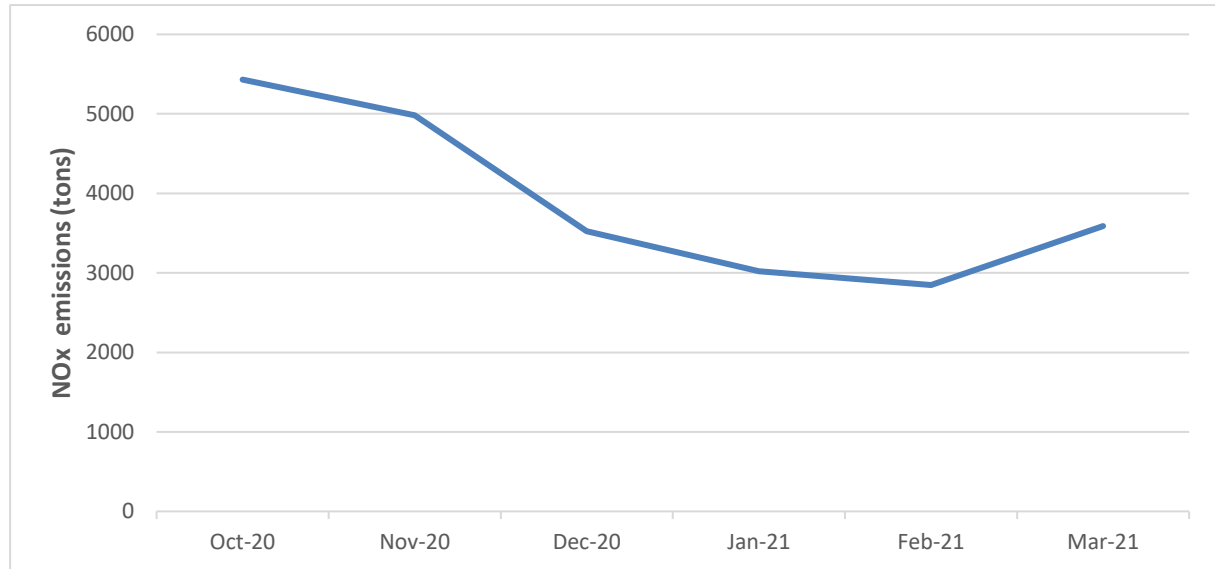


Figure 3. Calculated Monthly NO₂ Emissions in tons for Duvha Power Station October 2020-March 2021.

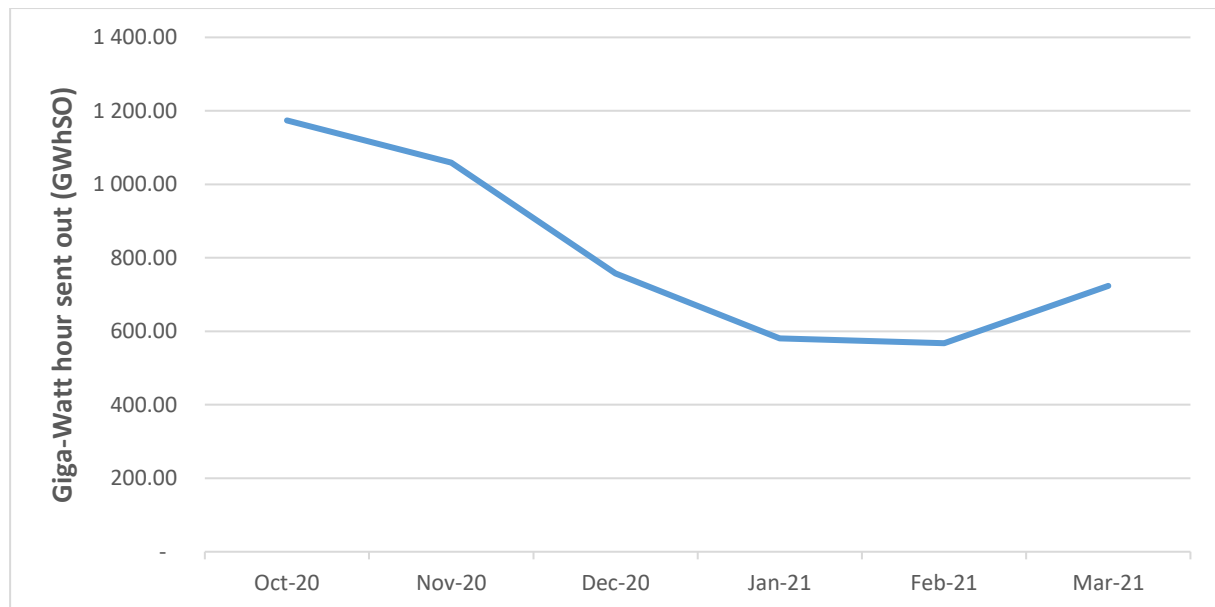


Figure 4 Monthly Energy sent out in GWh at Duvha Power Station October 2020-March 2021.

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.

Monitoring data availability

Table 2. General oversight of monitoring data availability for Duvha Power Station October 2020-March 2021 in terms of the number of full hours per annum that valid results were obtained for the CEMS in question.

	Unit 1	Unit 2	Unit 3	Unit 4	Unit 5	Unit 6
PM	99.35 %	100 %	Unit Offload	98.56 %	98.67 %	94.97 %
SO ₂	94.99 %	94.31 %	Unit Offload	91.32 %	99.00 %	95.04 %
NO _x	94.93 %	94.70 %	Unit Offload	91.60 %	99.00 %	95.04 %

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Compliance Audit Report(s):

There was no compliance audit conducted between October 2020 and March 2021. The audit report for last conducted Legal Compliance Audit was submitted to your office on 04/06/2020.

Major upgrades projects:

A project to install High Frequency Transformers (HFT's) on unit 4 and 6 which are currently using Electrostatic Precipitator (ESP) abatement equipment, is at the procurement stage.

This is aimed at reducing PM emissions to ensure compliance to the minimum emissions limits of 2020 (50mg/Nm³ for all units).

A project to install a spare Sulphur tank has been approved by the Duvha Site Committee and the Engineering Change Process is underway for the design of the new system. The purpose is to increase SO₃ plant reliability and availability.

Greenhouse gas emissions:

Greenhouse gas emissions are reported through the greenhouse gas reporting regulation process and as such are not included in this bi-annual emissions report.

Results of spot measurements or correlation tests:

Table 3. Overview of dates of last conducted CEMS verification tests for PM, SO₂ and NO_x (Please see annexure 2 for the verification test results)

Stack/ Unit	PM (Correlation tests)	SO ₂ (Parallel tests)	NO _x (Parallel tests)
Unit 1	20-23 April 2020	30-31 May 2020 & 16 July 2020	30-31 May 2020 & 16 July 2020
Unit 2	22-26 July 2019	13-16 July 2020	13-16 July 2020
Unit 4	23-25 March 2021	10-13 September 2019	10-13 September 2019
Unit 5	20-22 October 2020	22-24 May 2020	22-24 May 2020
Unit 6	14-17 October 2019	19-20 June 2020	19-20 June 2020

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

An explanation of all daily instances of exceedances (including the grace periods) of the minimum emissions requirements are included on the monthly emissions reports submitted to your office.

NEMA Section 30 Incidents

Table 4. Overview of emission license limit exceedances for the October 2020-March 2021 period.

Stack/unit and pollutant	Exceedance date [from – to]	Reason for exceedance	Remediation measure and effectiveness
Unit 1 and PM	26-28 March 2021	Failure to timeously manage the risk of high water inflow into the ash sump negatively affecting dusting and ashing leading into high emissions	<p>Corrective action:</p> <ul style="list-style-type: none"> Review procedure BI083 to include a scenario of excessive water inflow into the ash sump <p>Preventative actions:</p>

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			<ul style="list-style-type: none">• Create an awareness to immediately do unit load reduction to a minimum to avoid exceedance as per emissions procedure BI090• Maintenance to create awareness to escalate late permit issuing.• Review procedure BI090 to allocate coordination responsibilities to production department and include a risk assessment to mitigate high emissions and section 30 violations.
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NAEIS reporting:

Duvha Power Station submitted the annual report for 2020/2021 on the NAEIS system on the 31st of March 2021.

All gaseous (SO₂ and Nox) emissions tonnages figures reported on this bi-annual emissions report and previous annual emissions report are calculated figures.

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

Hoping the above will meet your satisfaction.

Supported by



T Madonsela
ENGINEERING MANAGER: DUVHA POWER STATION

Yours sincerely



L Chauke
DUVHA POWER STATION: GENERAL MANAGER