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Date:  
 25 May 2016

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

Dear Mandlenkosi Mahlalela

### KRIEL POWER STATION'S ANNUAL EMISSIONS REPORT

This serves as the annual report required in terms of Section 7.6 in Kriel Power Station's Atmospheric Emission License. The emissions are for Eskom's 2015/16 financial year which is from 1 April 2015 to 31 March 2016. Verified measured emissions of particulates (PM) and calculated emissions of SO<sub>2</sub>, NO<sub>x</sub> (as NO<sub>2</sub>), CO<sub>2</sub> and N<sub>2</sub>O are also included.

#### 1. Pollutant emission trends and greenhouse gas emissions

Particulate emissions are measured with opacity monitors, which are correlated to obtain emission concentrations. Gaseous emissions (CO<sub>2</sub>, N<sub>2</sub>O, SO<sub>2</sub> and NO<sub>x</sub>) are calculated from mass balance for SO<sub>2</sub> and CO<sub>2</sub>, from station-specific emission factors for NO<sub>x</sub> and from a generic emission factor for N<sub>2</sub>O.

The emissions in the table below are that of the 2015/2016 financial year.

Table 1. Total emissions at Kriel Power Station 2015/2016

Power Station	Coal-fired emissions (tons/annum)	Fuel-oil emissions (tons/annum)	Total (tons/annum)
Kriel Power Station	CO <sub>2</sub> : 17 528 055	CO <sub>2</sub> : 97 287	CO <sub>2</sub> : 17 625 342
	N <sub>2</sub> O: 284.877	N <sub>2</sub> O: not calculated	N <sub>2</sub> O: 284.877
	PM: 11 421	PM: not calculated	PM: 11 421
	SO <sub>2</sub> : 128 898	SO <sub>2</sub> : 14.87	SO <sub>2</sub> : 128 912.87
	NO <sub>x</sub> : 98 672	NO <sub>x</sub> : not calculated	NO <sub>x</sub> : 98 672

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Table 2. Pollutant Emission Trends for 2015/2016

Month	PM (tons)	SO <sub>2</sub> (tons)	NO <sub>x</sub> (tons)	CO <sub>2</sub> (tons)
April 2015	701.00	9 913	7 561	1 331 739
May 2015	682.00	10 235	8 850	1 560 118
June 2015	746.00	11 187	8 186	1 423 635
July 2015	1 264.00	13 356	10 173	1 767 822
August 2015	1 391.00	12 187	8 254	1 451 493
September 2015	910.00	10 797	7 813	1 367 594
October 2015	1 028.00	1 2014	9 018	1 600 213
November 2015	1 115.00	9 904	6 979	1 237 215
December 2015	1 216.00	9 181	6 469	1 171 784
January 2016	1 139.00	11 159	9 742	1 832 792
February 2016	532.00	8 707	7 493	1 365 505
March 2016	697.00	10 260	8 133	1 418 143

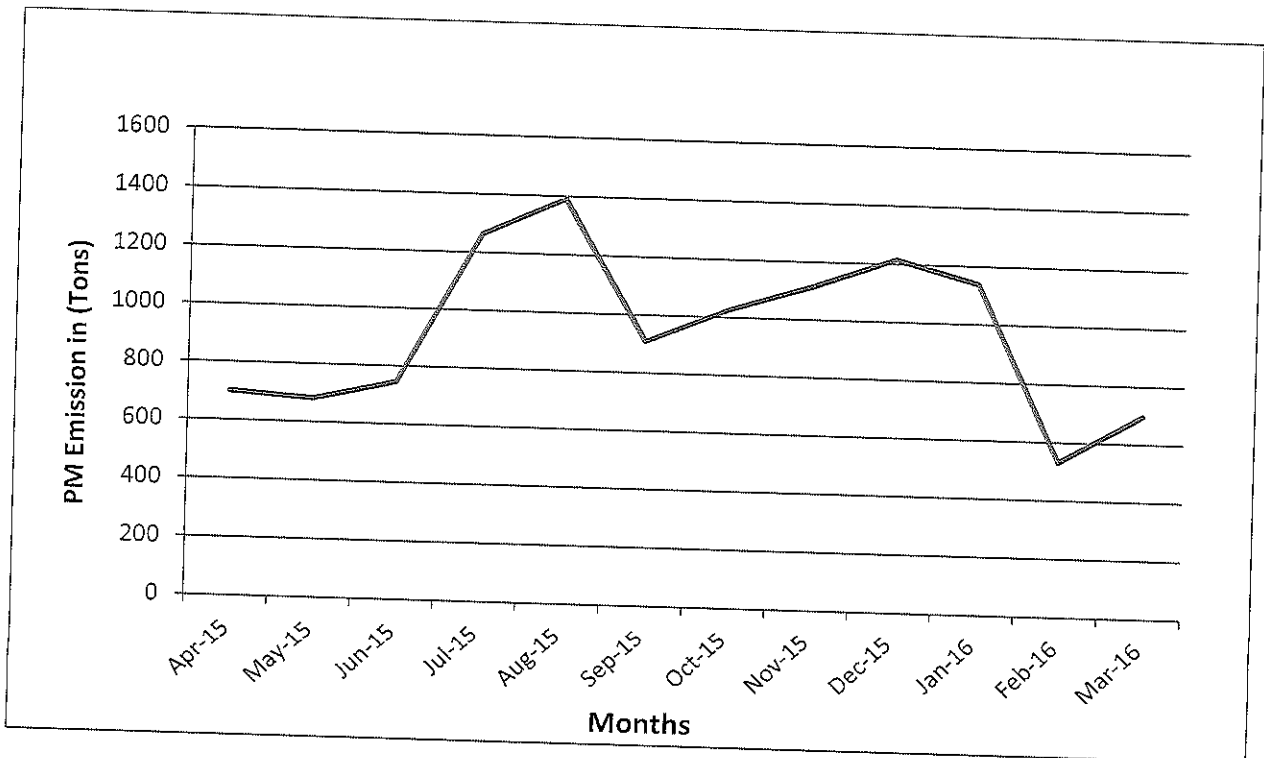


Figure 1 Monthly Particulate Emissions in tons from Kriel Power Station 2015/2016

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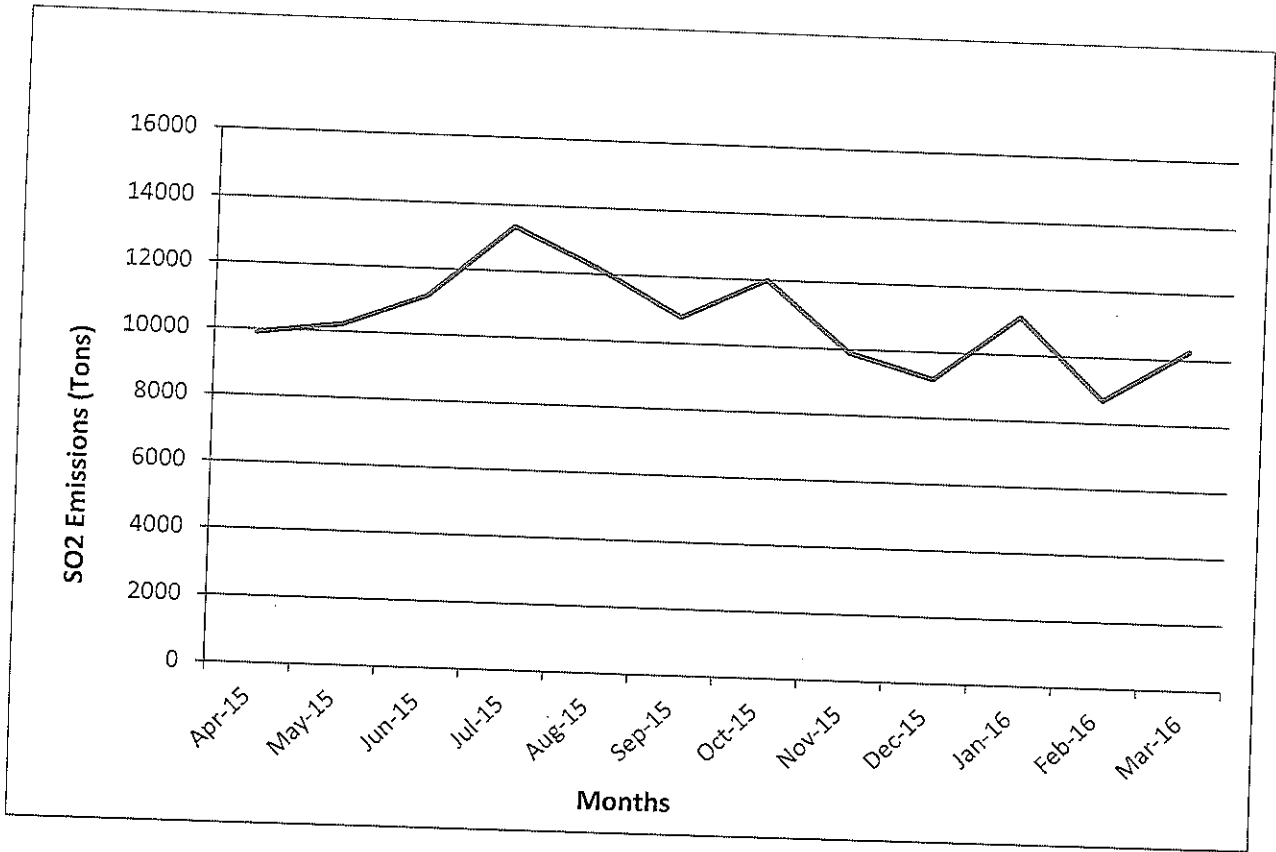


Figure 2 Monthly SO<sub>2</sub> Emissions in tons from Kriel Power Station 2015/2016

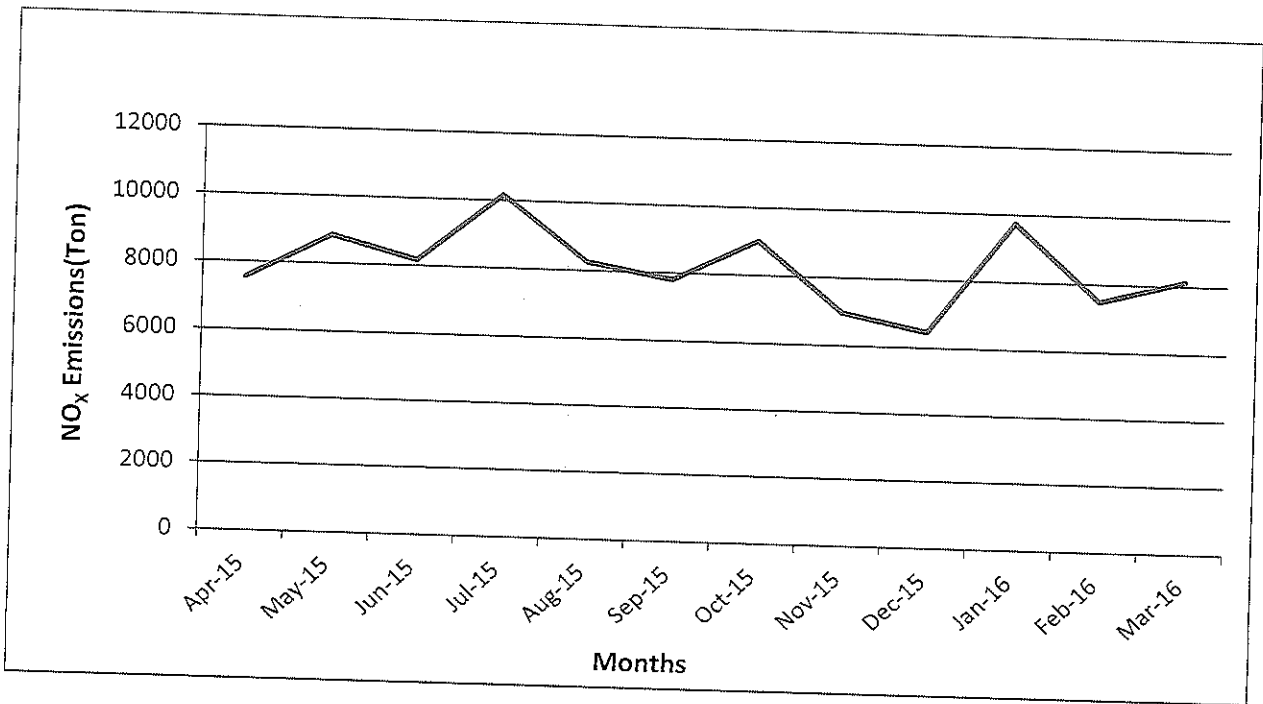


Figure 3 Monthly NO<sub>2</sub> Emissions in tons for Kriel Power Station 2015/2016

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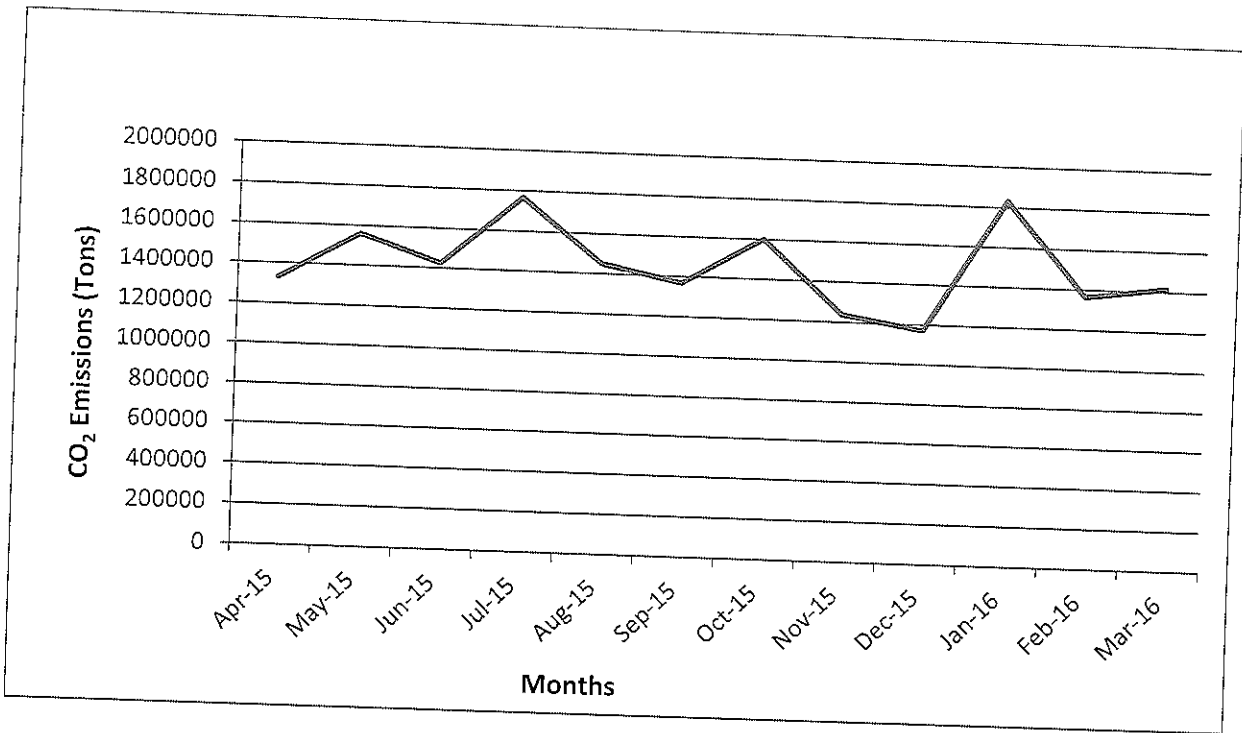


Figure 4 Monthly CO<sub>2</sub> Emissions in tons from Kriel Power Station 2015/2016

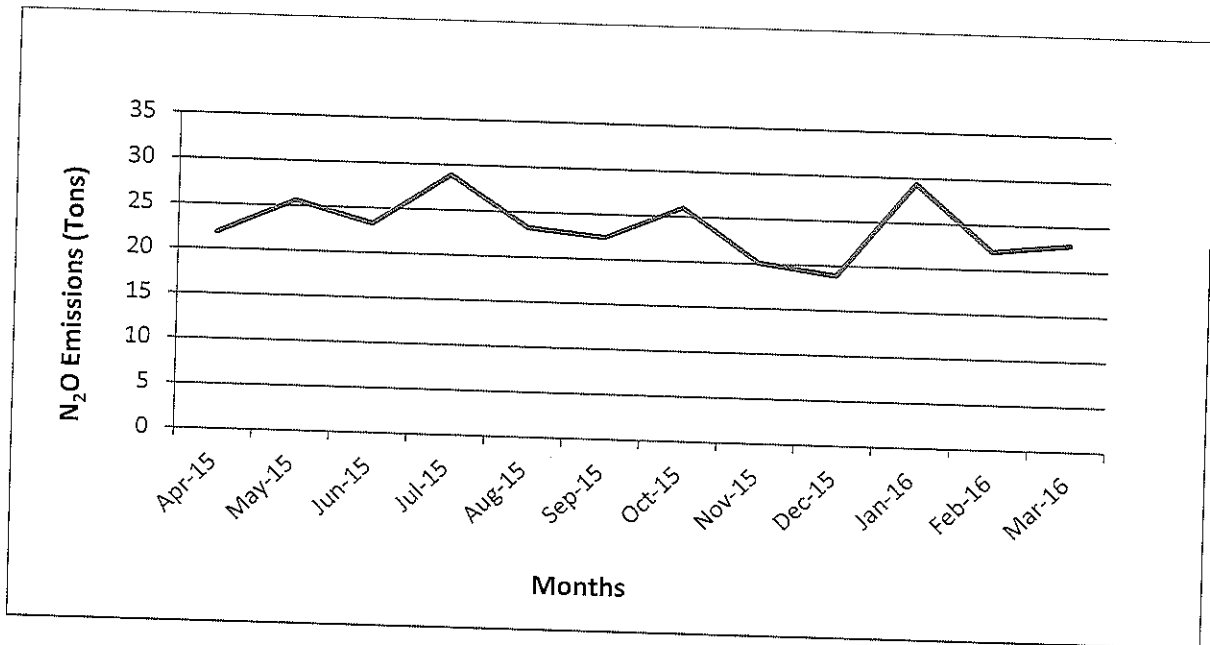


Figure 5 Monthly N<sub>2</sub>O Emissions in tons from Kriel Power Station 2015/2016

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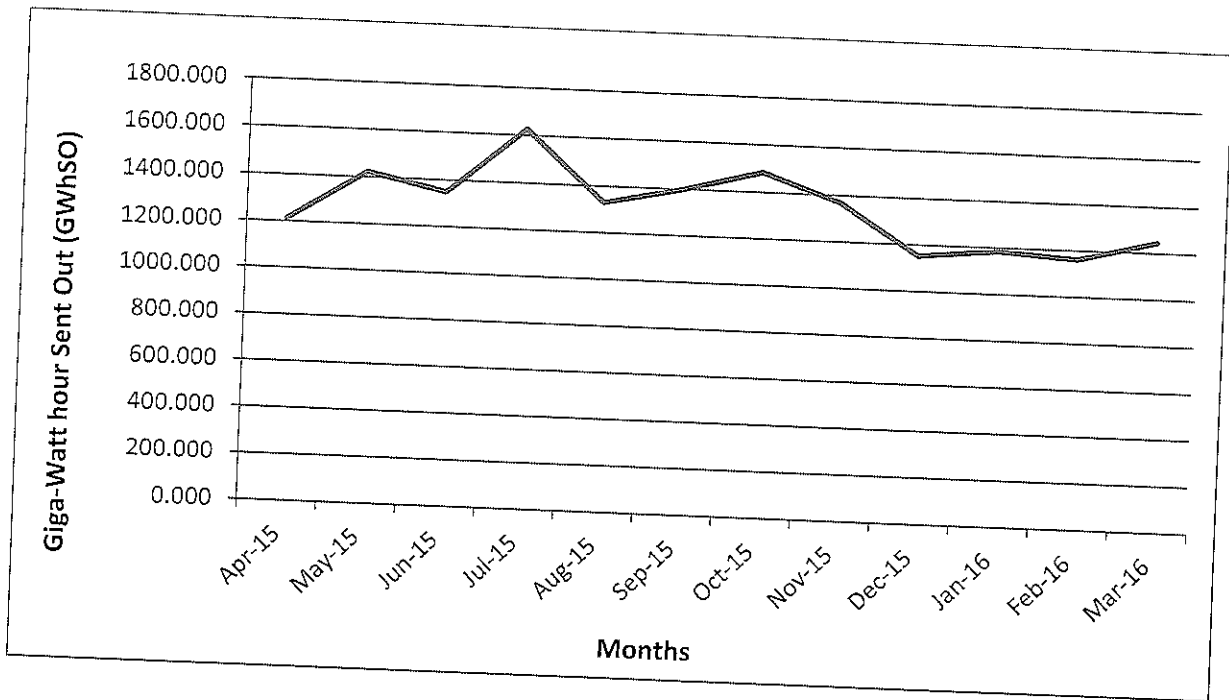


Figure 6 Monthly GWh sent out at Kriel Power Station 2015/2016

## 2. Compliance Audit Report(s):

Particulate Emission Data Integrity Audit was conducted on the 02 June 2015, no major findings were raised.

## 3. Major upgrades projects:

There were no major upgrades at Kriel Power Station. The next major upgrade on-site will be the retrofitting of Fabric Filter Plants on all units which is expected to commence in the 2017/2018 financial year.

## 4. Greenhouse gas emissions:

The CO<sub>2</sub> and N<sub>2</sub>O emissions (Tables 1 and 2) were low at the start of the 2015/2016 financial year; however they increased in the month of January 2016. The CO<sub>2</sub> and N<sub>2</sub>O trends correlate with the GW hours sent out per month. The minor discrepancies are primarily due to the variation in coal quality.

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,

Jabulane Mavimbela  
GENERAL MANAGER: KRIEL POWER STATION