



MINUTES OF MEETING BETWEEN BHARATCOKING COAL LIMITED (BCCL), KUYA OCP BASTACOLLA-IX, JHARIA, DHANBAD (JHARKHAND) AND ABHITECH ENERGYCON LIMITED (AEL) FOR THERMOL-D PERFORMANCE EVALUATION REPORT

Dated: 31/08/2021

Reference No: BCCL/GM/I-27/2021-22/640-645		Dated: 09.07.2021
Equipment	Without Thermol-D	With Thermol-D
Dumper-60838 (BEML)	26 July-21 to 8, Aug-21	11 Aug-21 to 30 Aug-21
Dumper-60839 (BEML)	26 July-21 to 8, Aug-21	11 Aug-21 to 30 Aug-21
Dumper-60851 (BEML)	26 July-21 to 8, Aug-21	11 Aug-21 to 30 Aug-21
Dumper-60857 (BEML)	23 July-21 to 8, Aug-21	11 Aug-21 to 30 Aug-21

Basis of Evaluation:

To quantify the HSD saving with the usage of THERMOL-D, as per following methods:

Calculation of Specific fuel Consumption & Performance Evaluation:

$$SFC = \frac{\text{Total Diesel Consumption}}{\text{Total Running Hours}}$$

The Saving (%) will be calculated as per the given formula:-

$$\text{Saving \%} = \frac{SFC_{Pre} - SFC_{Post}}{SFC_{Pre}} \times 100$$

Where,

SFC_{Pre} - Specific Fuel Consumption Without Thermol-D

SFC_{Post} - Specific Fuel Consumption With Thermol-D

Effect of Thermol-D on Key Parameters:

- ◆ Reduction in Specific Fuel Consumption(SFC)

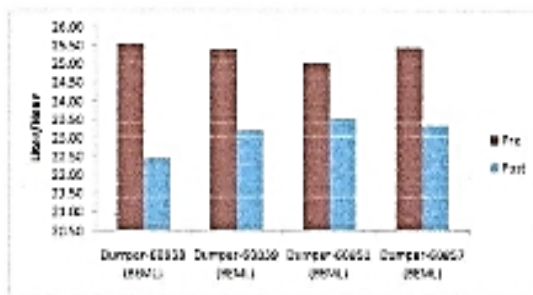
Data Collection

- THERMOL-D added in the ratio of 1:2000 on v/v basis.
- The same set of parameters has recorded during the Pre and post- Trial.
- HMR data were taken from the individual equipment's on daily basis.
- All the Data were authenticated by the section engineer.
- Enclosed:
Annexure I - Pre & Post trial report

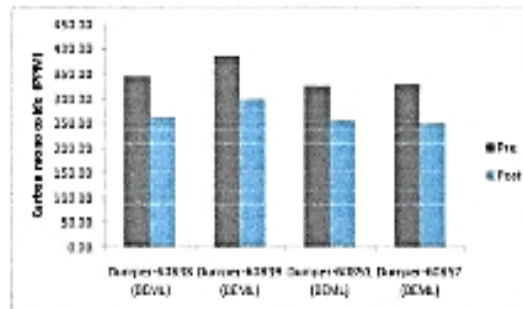
A. Comparison Report: Specific Fuel consumption (Liter/hour) & CO (PPM) comparison is given below:

Summary of Thermol-D Trial, M/s Bharat Coking Coal Limited, Kuya OCP, Bastacolla Area IX, Jharia Dhanbad (Jharkhand) and Thermol-D Trial Conducted by : M/s Abhitech Energycon Limited, Mumbai									
Sr. No.	Equipment	Trial Base	Trial Duration	Total HSD Consumed	Total Run	Emission- 824 rpm	Specific Fuel Cons.	HSD Saving (%)	CO Reduction (%)
				[Liter]	[Hour]	CO (PPM)	(liter/Hour)		
1	Dumper-60838 (BEML)	Pre	26 July-21 to 8, Aug-21	4365.00	170.80	346.09	25.56	12.24%	24.14%
		Post	11 Aug-21 to 30 Aug-21	6630.00	295.60	262.55	22.43		
2	Dumper-60839 (BEML)	Pre	26 July-21 to 8, Aug-21	5420.00	213.40	387.50	25.40	8.77%	23.01%
		Post	11 Aug-21 to 30 Aug-21	6912.00	298.30	298.35	23.17		
3	Dumper-60851 (BEML)	Pre	26 July-21 - 8, Aug-21	4425.00	176.80	326.29	25.03	6.01%	21.60%
		Post	11 Aug-21 to 30 Aug-21	6655.00	282.90	255.80	23.52		
4	Dumper-60857 (BEML)	Pre	23 July-21 to 8, Aug-21	4709.00	185.20	329.67	25.43	8.29%	24.24%
		Post	11 Aug-21 to 30 Aug-21	5995.00	257.10	240.75	23.32		
Average HSD Saving (%) / CO Reduction (%)								8.83%	23.25%

B. Comparison Chart: Specific Fuel consumption (Liter/hour) & CO (PPM) comparison is given below:



Liter per hour comparison with & without addition of Thermol-D



CO (PPM) comparison with & without addition of Thermol-D

Note:

1. There are fluctuations observed in the trend due to fluctuations in filling of HSD quantity in different equipments wrt. Operational hours, utilisation at different location of HEMM deployment.
2. HSD saving obtained is subjected to mining operational movements of equipments, therefore hsd savings may vary from mines to mines as per changes in geo physical operation movements, operational hours and utilization at different location of equipments (HEMM).

Cost Benefit Analysis:

Cost Benefit Analysis (CBA)					
Particulars	Unit	Dumper-60838 (BEML)	Dumper-60839 (BFML)	Dumper-60851 (BFML)	Dumper-60857 (BFML)
Average Specific Fuel Cons. Without Thermal-D	Ltr/Hr	25.56	25.40	25.03	25.43
Average Specific Fuel Cons. With Thermal-D	Ltr/Hr	22.43	23.17	23.52	23.32
Saving In Fuel Consumption	Ltr/Hr	3.13	2.23	1.50	2.11
Hours operated with addition of Thermal-D	Hour	295.60	298.30	287.90	257.10
Total HSD Saving	Liter	924.41	664.12	425.50	542.17
Cost of HSD saved (@Rs 91.35/- Liter)	Rs	84454.51	60691.96	38673.73	49532.68
Total fuel consumption with Thermal-D	Liter	6530.00	6912.00	6655.00	5995.00
Total Thermal-D added (1:2000 w/v)	Liter	3.315	3.456	3.3275	2.9975
Cost of Thermal-D (Rs 1800/- per Liter)	Rs	5967	6220.8	5989.5	5395.5
Total Saving (In Rs)	Rs	78487.51	54471.18	32884.23	44137.16
Total saving / Operating Hour	Rs/Hour	265.52	182.61	116.24	171.67

For, BHARAT COKING COAL LIMITED

For, ABHITECH ENERGYCON LIMITED

1. Mr. Rajendra Sharma- SOE (Excv).
HSD Filling/ KOCP/BA-IX

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1. Mr. Ramchandra Sahani -SE. Tech.

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2. Mr. Anil Kr. Yadav -Engr. Incharge (Excv).
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2. Mr. Durgvijay Bharti- Mgr. Technical

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3. Mr. B. D. Chattopadhyaya- Area Manager (Excv).
BASTACOLLA AREA-IX

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**Area Manager (Excv.)
Bastacolla Area-IX
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3. Mr. Debabrata Das- Dy. Reg. Manager

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