सेंट्रल कोल्फ़ील्ड्स लिमिटेड
(कोल इंडिया की अनुषांगी), एक मिनी रत्न कम्पनी(
दरभंगा हाउस,राँची-834029
संविदा प्रबंधन प्रकोष्ठ (सी.एम.सी).
फोन: 0651-2360219 , फैक्स: 0651-2361120
ईमेल- : gmcmc.ccl@coalindia.in
वेबसाइट:http://www.centralcoalfields.in

CENTRAL COALFIELDS LIMITED
(*A Miniratna Subsidiary Company of Coal India Limited*)
Darbhanga House, Ranchi, 834 029,
Contract Management Cell (CMC)
Ph: 0651-2360219 , Fax: 0651-2361120
Email : gmcmc.ccl@coalindia.in
Website http://www.centralcoalfields.in

No. GM(CMC)/SOR/2021/168 Dt. 10.03.2021

To,
The General Manager,
Argada/Barka-Sayal/Kuju/Hazaribagh/Rajrappa/Dhori/B&K/Kathara/NK/Piparwar /Rajhara/Magadh & Sanghmitra/Amrapali & Chandragupta/Giridih.

Dear Sir,

Sub: Modified Schedule of Rates (SOR) – 2021 for loading ,Surface to Surface Transportation of coal and Loading of coal into Railway Wagons.

This is to communicate the approval of Empowered Committee of Functional Directors (ECFD) in its 2021:14th Meeting held on 08.03.2021 vide Item No. 14.03 of the Modified Schedule of Rates (SOR)-2021 as above.

The ECFD after detailed deliberation, agreed to the subject proposed modification in Schedule of Rates and directed that all relevant guidelines of CIL and connected manual be complied with. Ffinal abstract of SOR has been received from National Productivity Council, Patna on 01.03.2021 and the same is being enclosed herewith for further needful.

You are requested to process all the estimate proposals based on SOR -2018. **The item of rates which are not covered in the above SOR, the existing SOR-2018 shall be applicable for the same.**

Yours faithfully,

10/03/2021
General Manager (C M C)

Encl: as above
Copy for kind information to :

1. Director(T)Opr., CCL, Ranchi
2. D(F),CCL, Ranchi
3. D(P),CCl, Ranchi
4. Director(T)P&P,CCL, Ranchi
5. GM/TS to CMD, CCL, Ranchi

Copy to :

1. Co. Secy., CCL, Ranchi
2. GM(Opr.),CCL, Ranchi
3. General Manager(Finance),CCL, Ranchi
4. GM(IED), CCL, Ranchi
5. GM(System),CCL, Ranchi: To upload the SOR-2021 on CCL website.
6. Sr. Manager(F)Opr., CCL
7. All executives of CMC Deptt.

Report ***Confidential***

Revision of Schedule of Rates (2021)

For

Loading, Surface to Surface Transportation of coal, including Loading of Coal in Railway Wagons

CONTRACT MANAGEMENT CELL

CENTRAL COALFIELDS LTD.

RANCHI

Prepared by

National Productivity Council

National Productivity Council

Boring Road Crossing, Patna 800 001

☎ 0612-2558311

E-Mail: patna@npcindia.gov.in ; npcpatna@gmail.com

url: www.npcindia.gov.in

CONTENT

ACKNOWLEDGEMENT

National **P**roductivity **C**ouncil **(NPC)** wishes to place on record its sincere gratitude and thanks to the management of Central Coalfields Ltd. (CCL). specially to **Shri P M Prasad, Chairman Cum Managing Director** for continued patronage of NPC's services.

We are grateful to **Shri V K Shrivastava, Director (TO)** for entrusting the study to NPC and his invaluable technical input and guidance during the study. The revision of SOR was done by NPC through analysis of primary information collected through extensive field studies in various CIL subsidiaries, use of secondary published information from various resources and onsite discussion with officials.

We are grateful to **Shri R R Shrivastava, General Manager (CMC)** for entrusting this study to NPC and providing deep insight into contractual issues involved in Loading and transportation for coal and other valuable suggestions towards successful completion of the study.

We are thankful to **Shri. Sanjeev Kumar, Chief Manager (Mining)** for excellent co-ordination work, logistics support, sparing his invaluable time for discussion and providing all the required information in time, which went a long way in successful completion of the study in time.

We record our appreciation and sincere thanks to the Management of the Central Coal Fields projects who extended their full co-ordination and logistical support during our field visits which was immensely helpful in comprehending the finer aspects of Mining activities.

Feb, 2021
Patna

(P R Upadhyay)
Regional Director

Study Team

The study team for "Revision of **Schedule of Rates** for "Loading and Transportation of Coal including loading of coal into railway wagons" comprised of the following consultants:

STUDY TEAM

ADVISOR:

Shri P R Upadhyay, Regional Director

TEAM MEMBERS :

1. Shri J K Singh, Director,
2. Shri Kumar Birendra, Asst. Director,

PERIOD OF STUDY

Feb 2021

Base Period Of Price Data for Tyres and Equipments

The price data of the equipments, tyres and lubricants were collected from respective OEMs during the study. The base period for price data is shown below:

Feb 2020

Definition of Terms Used in report

HEMM : Heavy Earth Moving Machinery

F2S : **(Face To Surface)** -Transportation of coal / OB from face to surface **involving movement on gradient route.**

S2S : **(Surface To Surface)** -Transportation of coal from stockpile / crusher to specified location on normal surface routes / public roads.

Available Time per year:

Available time of equipment per year is actual time for which the equipment will be available for productive use, excluding unavailability of equipment due to maintenance and other reasons.

Available Time per day:

Available time per day is actual time for which productive work is carried out, excluding time for statutory/ policy breaks for workforce and unavailability of equipment due to maintenance and other restrictions.

1 EXECUTIVE SUMMARY

Central **C**oal **F**ields **L**td. Ranchi (**CCL**) has entrusted the study for Revision of Schedule of Rates (SOR) for "Loading and Transportation of Coal including loading of coal into railway wagons" to **N**ational **P**roductivity **C**ouncil, Patna (**NPC**). The scope / terms of reference of the study is as follows:

SCOPE / TERMS OF REFERENCE

The scope/ Terms of reference of the study is to revise the SOR for the following:

A. Loading of Coal:

- Loading of coal by contractor's payloader into contractor's tipping trucks by engagement of Payloaders with 4.5 CuM bucket capacity
- Loading of coal into wagons by contractor's payloader by engagement of Payloaders with 4.5 CuM bucket capacity

B. Surface to Surface Transportation of Coal:

- Contractual Surface to Surface transportation of coal from different lead slabs of 1 km (From 0-40 Kms) by deploying coal tippers of 20 Te capacity

FIELD STUDY AND DATA COLLECTION

NPC consultants had carried out extensive field visits in various subsidiaries of Coal India to determine the major cost element i.e. consumption of HSD, actual field studies have been carried out to determine the cycle time i.e. loading , unloading , security check, waiting and traveling time etc. taking into account all the factors affecting the total travelling time for coal transportation and the actual HSD consumption in various leads. The actual field study has been carried out for all equipments for various cycle times covering different slabs of travel to arrive at Diesel consumption. The study was carried out to capture data on following aspects:

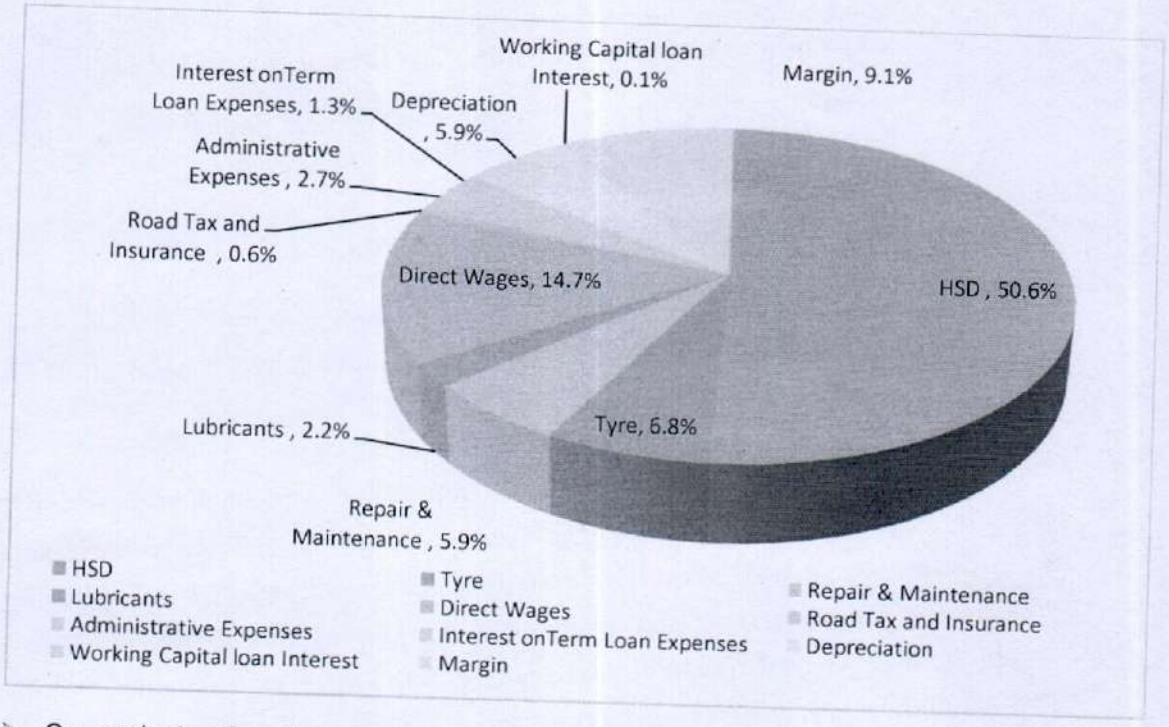
- Time study of all the activities to determine output
- Actual Fuel consumption in equipments during operation
- Design of structured questionnaire to collect data on details of equipments deployed for mining activities
- Optimum fleet size for equipments deployed in various mining activities
- Past records of Maintenance costs of equipments
- Organisation structure and human resource deployment in operational and supervisory activities

- Current market prices of equipments, tyres and lubricants etc. from respective OEM and manufacturers
- View points of HEMM operators about various issues through interviews and discussions

DATA ANALYSIS AND OBSERVATION:

Data analysis was done to arrive at the following observations about the various components of the SOR.

Cost Structure of Surface to Surface transportation



- On analysis of various elements of cost which has been used for computation of SOR, the cost of High Speed Diesel (HSD), Tyre cost, Repair & Maintenance Cost , direct wages, administrative expenses and the Profit margin of the contractor constitute about 80% to 85 % of the total cost, whereas the remaining factors like Direct wages, Depreciation, Road Tax & Insurance, Interest on term loan & working capital loan etc. constitute about 15%-20 % of the total cost.
- For optimizing Schedule of rates, efforts need to be made on improving the fuel efficiency of equipments.

Schedule of rates (SOR) 2021

Based on study findings, the schedule of rates for various activities as specified in Terms of Reference has been determined and summarized as shown in table 1 below.

Loading and transportation of coal

Loading of Coal by contractor's payloader into contractor's tipping trucks:

Item No.	Description	Rate (Rs./Te.)
1 (a)	Loading of Coal by contractor's payloader into contractor's tipping trucks at stockpile (surface stockyard/quarry bed stock/face)	**8.37**
1 (b)	**Loading of Coal by contractor's payloader into railway wagons.** Loading of coal into railway wagons by contractor's payloader(s) at railway siding including leveling of wagons, lime sprinkling at top of railway wagons, cleaning of track etc. as per instruction of engineer in charge.	**9.00**

	Description	Mean Lead (km)	Rate (Rs./Te.)	Mean Lead (km)	Rate (Rs./Te.)
2	**Transportation of coal (surface to surface-S2S):** Transportation of coal by suitably covered contractor's tipping trucks from ..... To ..... as per direction of Engineer in charge.	0.5	16.26	20.5	176.90
		1.5	27.06	21.5	183.99
		2.5	36.80	22.5	191.04
		3.5	45.92	23.5	198.05
		4.5	54.69	24.5	205.02
		5.5	63.20	25.5	211.97
		6.5	71.48	26.5	218.88
		7.5	79.62	27.5	225.76
		8.5	87.61	28.5	232.62
		9.5	95.46	29.5	239.44
		10.5	103.23	30.5	246.24
		11.5	110.89	31.5	253.02
		12.5	118.48	32.5	259.77
		13.5	125.96	33.5	266.50
		14.5	133.41	34.5	273.20
		15.5	140.79	35.5	279.89
		16.5	148.11	36.5	286.55
		17.5	155.38	37.5	293.22
		18.5	162.60	38.5	299.84
		19.5	169.77	39.5	306.45
	Note: The SOR in table above includes charges for weighment at one end.				
2.1	**Additional rate for weighment per occasion(Rs./te)** E.g. for transportation with weighment at both ends, Rs. 0.53 per ton shall be added to rate shown in this table for applicable lead. Accordingly, the description of item shall read as: "Transportation of coal by suitably covered tipping trucks from _____ to _____. Including weighment at both ends as per direction of Engineer-in-charge."				**0.53**

Item No.	Additional Rates for Contractual Transportation of Coal (Surface to Surface) on routes having one railway crossing			
2.2	Additional Rates for Transportation of coal by contractor's tipping trucks on routes having one **railway crossing** *Note: Please refer qualifying criteria for hindrances.*	>5hrs	Rs. Per Te per trip	**1.23**
		4-5 hrs		**1.00**
		3-4 hrs		**0.78**
		2-3 hrs		**0.56**
		1-2 hrs		**0.33**
		<1 hr		**0.11**
	Additional rates for Contractual transportation of Coal (Surface to Surface) on routes having No entry Restrictions			
2.3	Additional Rates for Transportation of coal by contractor's tipping trucks on routes having **No Entry restriction** *Note: Please refer qualifying criteria for hindrances.*	>5hrs	Rs. Per Te per trip	**1.23**
		4-5 hrs		**1.00**
		3-4 hrs		**0.78**
		2-3 hrs		**0.56**
		1-2 hrs		**0.33**
		<1 hr		**0.11**

SOR is based on the following considerations:

1. Coal transportation tipper considered in SOR is with average carrying capacity of 20 MTe per trip.
2. **Diesel Base Price** : Rs. 86.03 per Liter
3. **High power committee wages** of CIL for contractors workers engaged in mining activities with effect from 22.10.2020 (High Power Wage Committee report: Notification No: CIL/C-5B/JBCCI/JC/ VDA/277 dated: 22/10/2020) and latest notification on contribution towards Coal Mines Pension (Amendment) Scheme 2018 (Ref: CIL/C 5A (PC)/CMPS/2897 dated 23.06.2018

   Group Insurance : While calculating the total annual cost towards wages, payment of premium towards Group insurance of Rs. 15.0 lakhs has also been considered as per CIL notification on "Enhancement of Ex-gratia amount for fatal coal mines accident, from Rs. 5.0 lakh to 15.0 lakh" Ref No: CIL/C-5B/JBCCI-X/Ex-gratia/504 dated 14.11.2019. Please refer annexure for wages for each equipment.

(High Power Wage Committee Report: Notification No: CIL/C-5B/JBCCI/JC/VDA/277 dated: 22/10/2020)

Details of Wage element	Unskilled	Super-visory	Skilled	Highly Skilled
Minimum Wages	787	817	847	877
D.A.	119	124	128	133
PF 12 % & 7% pension benefit and bonus wherever applicable as per bonus act	172.14	178.79	185.25	191.90
Total Rs.	**1078.14**	**1119.79**	**1160.25**	**1204.90**

VALIDITY OF REPORT:

This report shall be valid for a period of three years from date of submission of report and approval of SOR. It is recommended that the SOR should be reviewed after every three years to account for various techno-commercial changes in workings and equipments involved in mining operations.

4. Qualifying Criteria for application of additional payment clause due to hindrances in coal transportation:

Payment of additional rates in surface to surface transportation of coal arising due to various hindrances present in coal transportation route will be subjected to qualifying criteria as mentioned below:

A. **Hindrance caused due to enforcement of No Entry / Route restriction :**

Hindrance caused due to enforcement of No entry/ route restriction will be subjected to the following criterion:.

- In general Entry restriction / No entry notified by the Govt./ district authorities/ local authorities will only be treated as hindrance.
- No entry or route restriction of duration less than one hour (sixty Minutes); will not be considered as hindrance.
- Additional payment shall be made for each hindrance of in multiple of one hour and part thereof (rounded off to nearest complete hour) at applicable rates as mentioned in SOR.

Note: It may be noted here that most of the hindrances mentioned above are due to current prevailing road conditions and local issues which is quite dynamic in nature. Hence the additional rates provided in SOR presented above may be applied till such problems continue to exist. However, it must be reviewed from time to time (say every six months/ 1 year) to assess the current level of hindrances. In case the hindrances have been removed, the additional rates considered in awarded rates may be deducted in proportion to ratio of awarded rate Vs SOR rate for that item.

In case rate of coal transportation includes additional rates on account of hindrances, NIT shall mention details of such hindrances considered and their rates. NIT shall also mention that when any of hindrance(s) included in estimate is withdrawn/reduced after award/during execution, deduction shall be applicable from Report on Formulation of SOR for Hiring of HEMM for OC Patches of CCL awarded rate of the transportation item @ (rate of hindrance considered in estimated rates to the extent reduced or withdrawn) x (awarded rate /SOR rate of the transportation item). The continuance/reduction/withdrawal of hindrance shall be certified by Engineer- in Charge.

1.1 Background

Central Coalfields Limited Ranchi is a Category-I Mini-Ratna Company since October 2007. Formed on 1st November 1975, CCL (formerly National Coal Development Corporation Ltd) was one of the five subsidiaries of Coal India Ltd. which was the first holding company for coal in the country (CIL now has 8 subsidiaries). The company is engaged in mining of coal and allied activities. The Mission of CCL is to produce and market the planned quantity of coal and coal products efficiently and economically with due regard to safety, conservation and quality.

The company presently owns 22 underground and 40 open cast mining projects apart from coal washeries, Central workshops and regional workshops. Coal production in various mines is done either though it's own departmental Infrastructure, manpower & machineries or the activity is completely or partially outsourced to HEMM operators. The company hires HEMM operators for a range of activities encompassing the whole gamut of mining operations starting form Removal of Over Burden, excavation and transportation of coal through a range of HEMM equipments, transportation of coal and OB, loading of rail wagons etc. HEMM operators are hired for each activity separately or for a multiple combination of activities specifying their exact responsibilities.

These HEMMs are hired on contract based on specified rates known as "Schedule of Rates (SOR)" wherein rates of payment are defined for all the activities separately. These rates are determined and fixed by a specified committee and approved by Board of Directors at specified intervals and periodically revised to accommodate cost variations due to inflation and government regulations. These SOR form the basis for estimation of work and justification of price while finalizing a contract.

In this context, CCL management approached National Productivity Council to formulate SOR for hiring of HEMMs and transportation etc. The terms of reference of the study is as follows:

1.2 SCOPE / TERMS OF REFERENCE

The scope/ Terms of reference of the study is to revise the SOR for the following:

A. Loading of Coal:

- Loading of coal by contractor's payloader into contractor's tipping trucks by engagement of Payloaders with 4.5 CuM bucket capacity
- Loading of coal into wagons by contractor's payloader by engagement of Payloaders with 4.5 CuM bucket capacity

B. Surface to Surface Transportation of Coal:

- Contractual Surface to Surface transportation of coal from different lead slabs of 1 km (From 0-40 Kms) by deploying coal tippers of 20 Te capacity

1.3 METHODOLOGY

The broad methodology adopted for formulation of SOR considers each equipment is as a cost centre and takes into account all the cost elements incurred throughout the process including cost of support functions like supervisory manpower, establishment overheads etc. The following methodology was employed for carrying out the study:

- Discussions with the concerned management personnel / committee at CCL to understand the various aspects of loading and transportation operations.
- Considering each equipment as a cost center, the concept of Activity Based Costing / Material Flow Cost Accounting system will be used to identify major cost components associated with all the operations.
- Discussions with current operators would be held to understand their perspective of these operations and identify issues which affect their productivity and cost economics.
- Study and review of existing practices / study reports for establishing of SOR for coal mining and transportation.
- Field visits to be taken up to the selected project areas for the followings:
  - To undertake a detailed study for establishing / verification of existing production norms for various operations involved in coal cutting, loading, transportation etc. which will form the basis for formulation of SOR.

- In case of unavailability of filed study due to reasons whatsoever, the NPC field study data of similar studies for other subsidiaries may be used for formulation of SOR.
- Discussion with field personnel involved in these operations to understand the local conditions & complexity involved in coal mining and transportation in the area, various factors affecting the coal handling activity etc. and their respective cost implication.
- Data collection through secondary sources including discussion with OEMs regarding various issues like capital cost, life of equipment, life cycle cost assessment etc.
- Expert Opinions to be also sought wherever felt necessary e.g. tyre life and replacement policies, depreciation methods, insurance premiums etc. to authenticate the data used in computation of SOR. Use of secondary sources of information like published documents etc would be taken up..
- Based on the field visit, the data collected through time study/ production study, the data supplied by concerned operators and the data collected through secondary sources/ discussions to be analyzed to formulated SOR for above mentioned operations.
- Discussions with CCL management to be held during this process wherever required and their view points were incorporated before finalization of SOR.
- Based on above, a draft report will be prepared and submitted to GM (CMC), CCL for their views and observations. After reviewing and incorporating comments, final report would be submitted.

1.4 CONCEPTUAL FRAMEWORK ;

The broad conceptual framework of formulation of SOR has been shown in figure 1 and figure 2 below. This model takes into account all the cost elements incurred throughout the process including cost of support functions like supervisory manpower, establishment overheads etc.

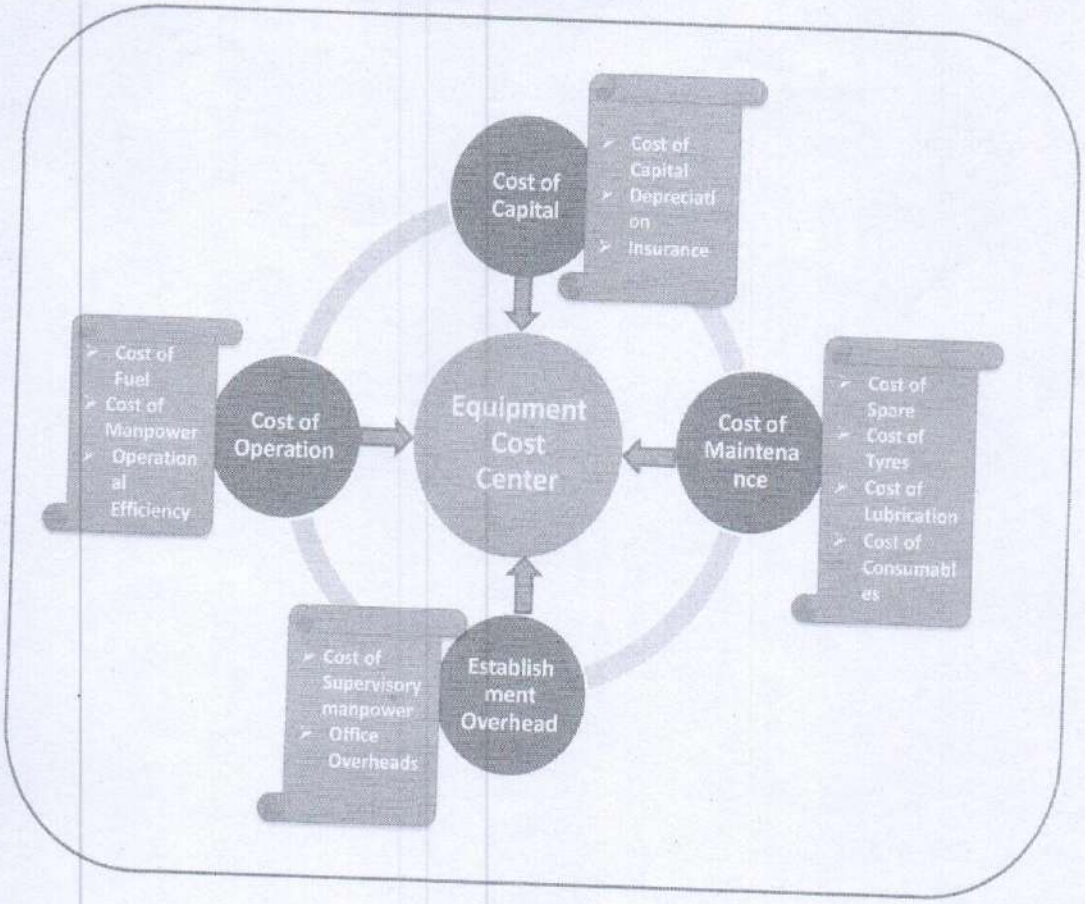


Figure 1 : Equipment Cost Center

STUDY METHODOLOGY - Model for Formulation of SOR

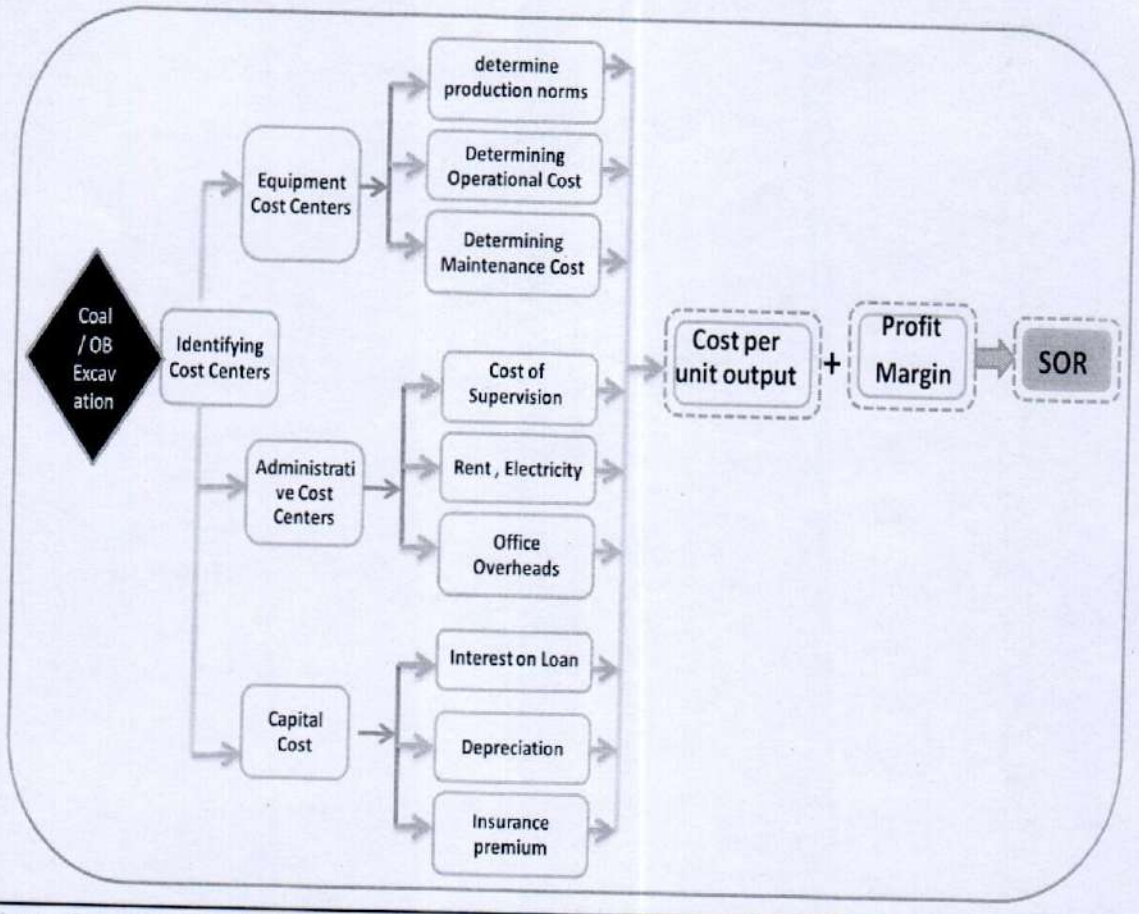


Figure 2 : Conceptual Model for formulation of SOR

1.5 DELIVERABLES :

2 copies of study report containing Schedule of Rates for various activities as defined in terms of reference of the report.

2 Formulation of Schedule of Rates- Approach:

2.1 Introduction:

Central Coal Fields Ltd. Ranchi has been outsourcing coal mining activities like Loading and transportation of coal including loading of cola into railway wagons etc. based on Schedule of Rates (SOR) formulated for the same. The existing SOR for loading and transportation of coal was formulated by National Productivity Council and approved by the CCL Board of Directors on 16th August 2018 and currently in vogue. However, due to increase in scale of transportation from mine to Railway siding and loading of coal into railway wagons, there is a need revise existing SOR for obtaining more realistic estimates for loading & transportation of coal including loading of coal into railway wagons. In view of this, a discussion was held between officials of CCL and NPC for taking up the study on revision of Schedule of Rates for said operations. Accordingly, as per decision of competent authority, the study on revision of SOR was entrusted to NPC Patna vide work order: No.GM(CMC)/SOR/2021/96 Dated 24.02.2021 with scope of work mentioned therein.

2.2 Field Study

2.2.1 Data Collection:

The data collection for the study was done by NPC study team through a multipronged approach:

- Work Measurement Study / Direct Observation
- Use of field study data for similar equipments in other coal subsidiaries
- Physical Measurement e.g. Tipper volume, diesel consumption
- Structured Questionnaire for historical data for maintenance of all the equipments.
- Discussion with HEMM operators and their supervisory personnel
- Field documents and records of HEMM operators maintained at their filed office.
- Information collected through discussions with OEMs and other secondary sources

The study team tried to authenticate the data collected through discussions from various sources through records and field observations before using it for determination of SOR.

2.2.2 Time Study / Direct Observation:

Various activities for which time study was carried out by NPC study team is listed below:

A. Coal transport

- Time for loading of coal by payloaders into tippers
- Round Trip travel time of Tippers for transportation of coal from Surface to Surface (Coal yard to Railway siding) for various lead segments in the range of 0-40 Km
- Weighing time of Coal laden tippers including waiting time in queue.
- Diesel consumption for tippers (KMPL)
- Diesel consumption for payloaders per hr of operation
- Avg. Waiting time for tippers at railway crossing

B. Wagon loading at stockpile and Railway Siding

- Loading time for loading of coal into tippers by payloaders
- Wagon loading time for loading of coal by payloaders

2.3 EQUIPMENTS STUDIED FOR FORMULATION OF SOR:

The field study was conducted for actual HEMM equipments deployed by various contractors during the study period. It was observed that the equipment deployed by HEMM operators at the mining site differed in make and capacity in many cases. The list of equipments studied at various sites is given in table 2.1 below:

Table 2.1

S. No.	Equipment	Make	Capacity
1	Payloader / Wheel loader	CAT950	168 Hp, 4.5 CuM
2	Coal Tippers	Tata Prima 3125	20 Te

2.4 OPTIMISATION OF FLEET STRENGTH:

The Fleet strength of the HEMMs during any mining operation has a vital bearing on the productivity of HEMMs. Over deployment of HEMMs may result in interference in their working or force idleness of equipments. In both case, the productivity of HEMMs will be reduced. Hence, the fleet strength of HEEMs for a particular operation needs to be optimized. The fleet composition of various mining operation is shown in table 2.2 below:

Table 2.2

Sl	Mining Operation	HEMM combination deployed	Critical Equipment w.r.t. Productivity	Fleet Optimisation criteria
1	Coal transportation	➢ Pay loaders ➢ Tippers	Payloader	Zero / Least idle time of Payloader and idle time of tippers
2	Wagon Loading	➢ Payloader	Wagon	Permissible wagon loading time/ Target Production Level/ Rake Availability

2.4.1 Objectives for Fleet Optimisation

Fleet Optimisation Criteria was determined with the following objectives:

- To maximize production of Coal as per target
- Reduce cost / increase productivity by minimizing the idle time of key equipments.
- Reduce capital deployment thereby reducing capital cost

2.4.2 Optimum Fleet Size

Fleet size for any activity is dependent upon following factors:

- Type and Capacity of equipments used
- Cycle time of operation for each equipment
- Criticality of equipment for mining operations
- Targeted Production level

Based on the analysis of data collected during filed study and average production level of OB and coal for past two years, the optimum fleet size for various operations have been determined with above mentioned criteria, as shown in table 2.3 below:

Table 2.3

Sl	Activity	Equipments Used	Optimum Fleet Size
1	Transportation of Coal in different lead slabs	❖ Payloader ❖ Tipper	Payloader : 7 Nos Tipper : Lead Based
2	Loading of coal by payloader into Wagons	❖ Payloaders	Payloaders : 5 Nos.

It may be noted here that in case of activities involving coal transportation, the optimum fleet strength for combination of HEMMs would vary according to the transportation lead i.e. the distance to be covered from loading point (Quarry Face) to unloading / dumping point. For example, in combination of payloaders and tippers, no. of tippers per payloader is directly proportional to the lead distance. Increase in the distance will result in increase in number of tipper per payloader. The optimum no of tippers was decided based on the assumption of most likely lead range of operation.

2.5 CALCULATION OF AVAILABLE TIME:

For calculating the total cost of operation for mining activities, the some assumptions have been made for calculating available working time per day and per annum as shown in table 2.4 below:

Table 2.4

Calculation of Available Time of Equipment per Year	
Number of days per Year	365
Avg. no. of closures/ stoppages per yr due to seasonal rains, external forces including cultural and political issues etc.	15
Time allocated for breakdown maintenance of equipments as per standard practice followed by NPC	20
No. of working days per year	**330**

Calculation of Available Time per day

Time per shift	480	minutes
No. of shifts per day	3	
Lunch Break per shift	30	Minutes
Shift Hand Over / Take Over allowance	20	Minutes
Available Time per shift	**430**	**Minutes**
Total Time Available per day	**1290**	**Minutes**
Allowance for Maintenance per day including Stoppage of work due to Blasting	120	Minutes
Working Time Available per day	**1170**	**Minutes**
Working Hrs available per day	**19.5**	**Hrs**

2.6 Calculation of Manpower reserve percentage

For determining the total manpower requirement for direct operating personnel, provisions for manpower reserve on account of weekly off and absence due to leave and sick has been made. The calculation of manpower reserve percentage is shown in table 2.5 below:

Table 2.5

Calculation of Off and Leave reserve:	
Particulars	**Days**
Total Working Days per annum	**365**
Weekly off	52
Casual Leave	11
Earn Leave (50 % of eligible 28 days)	14
Sick Leave	10
Closed Holidays	10
Total Leave likely to be availed per annum	45
Total Absence (Weekly off + Leave) per annum	**97**
Reserve Percentage (Approx)	**26.00%**

These provisions of reserves are made to deploy manpower from the reserve pool, on days of weekly off and absence due to various reasons like availing of provisioned leave like CL, EL /PL and medical leave etc.

2.7 FORMULATION OF SOR:

2.7.1 The SOR has been formulated based on the cost center concept for each mining activity. Relevant data for each cost center was collected through actual field study carried out across various projects of CCL to factor in the variations due to local conditions. Based on detailed studies, past records and discussions with HEMM operators as well as CCL officials the findings of the study were validated before incorporation into SOR.

2.7.2 **Data Source for determination of various cost elements for SOR**:

To determine the major cost element the data source used for the purpose is as follows:

Sl No	Cost element	Approach / Data source
1	Cost of HSD	Actual field studies have been carried out to determine the output norms for each activity i.e. loading , unloading , security check, waiting and traveling time etc. taking into account all the factors affecting productivity and the actual HSD consumption in carrying out these activities.
2	Cost of Tyres	Based on latest tyre price as obtained for dealers / manufacturer of MRF tyres
3	Equipment Cost	Latest Price of equipments as supplied by OEM and HEMM operators
4	Maintenance cost	Based on filed study, technical discussions with HEMM operators, Past records and OEM recommendations
5	Lubrication	Based on OEM recommendation and latest price of lubricants sourced from Indian Oil Corporation Ltd.
6	Insurance and Road Tax	Calculated based on latest rates from Govt. Insurance companies and latest Road tax rates as per information provided on Govt. websites.
7	Wages and Administrative expenses including expenditure on office establishments	**Direct workers**: Wages for all category of direct workers based on the recommendation of High Power committee of CIL constituted for wage determination **(High Power Wage Committee report: Notification No: CIL/C-5B/JBCCI/JC/VDA/277 dated 22.10.2020)**
		Support Employees :Wages for all indirect employees based on discussions with HEMM operators and current wage levels prevalent in the industry
8	Interest on Term loan and working capital	Prevailing rates of interest rates of nationalized banks applicable on term loan and working capital
9	Depreciation	Straight line method for calculation of depreciation of equipments assuming a life of 9 years and salvage value of 5 %.

The field study was conducted across various projects for all the mining activities involved in Loading and transportation of Coal including loading of coal into railway wagons. Efforts were made to ensure adequate sample study of all the parameters specified in Terms of Reference. Since the HEMM operators of different projects deployed varying makes and capacities of equipments, the findings have been summarized and average of all the observed data has been taken as a representative data for all the equipments of same category. The summarized data is presented in subsequent tables.

Tippers: In case of coal tippers it may be mentioned here that the maximum permissible loading limit for coal tippers enforced by transport authorities is 31 Te. The net weight of coal has been taken as 20Te, assuming a tier weight of 11.0 tones for Tata Prima 3125 tippers.

3.1 Diesel Price:

The diesel price for calculation of SOR has been taken as **Rs. 86.03/Lit** as per the price of diesel prevailing in Ranchi, Jharkhand during the period of study.

3.2 Tyre Price and Life:

The price of various types of tyres used in tippers and payloaders have been taken from MRF tyres. The life of tyres in mining conditions have been determined based on the discussions held with HEMM operators and data collected during field study . The expert opinion of the tyre manufacturer and dealers were also taken into account. The tyre price considered for calculations have been shown in table 3.1 below:

Table 3.1 : Tyre Price

Tyre Specification	New tyre price (Rs.) without GST
10.00-20 (16 Ply)	16406
Payloader Tyre 23.5 R25	97656

The life of tyres for tippers and payloaders have been shown in tables 3.2 below:

Table 3.2

Tippers : Tyre Life (Km)

Type of vehicles	Life of tyres (Km)
Coal Tippers F2S	20000-24000 Km
Coal Tippers S2S	22000-30000 Km

Tyre life for Payloaders			
Place of Operation	Life of tyres envisaged (hrs)	Retreaded Life hrs	Total Life hrs
Conventional Coal Face	1950	1560	3510
Surface Miner site	2100	1680	3780
Stock Pile	2150	1720	3870
Wagon Loading	2250	1800	4050

3.3 Cost of Maintenance and lubrication :

The cost of repair and maintenance for different equipments were collected through structured questionnaire from HEMM operators. The past records of maintenance Cost of these equipments were also analysed to determine the current repair and maintenance cost. For lubrication, the current price of lubricants were obtained for Indian Oil Company.

3.4 Direct Wages :

The manpower for the HEMM operators have been categorized in two distinct groups i.e. Direct workers and support employees.

Direct Workers: The employees involved in direct operation of equipments and vehicles both in skilled and unskilled category including their supervisory personnel have been categorized as direct workers. The wages for direct workers have been determined based on the recommendation of High Power committee of Coal India Ltd. Constituted for wages (High Power Wage Committee report: Notification No: CIL/C-5B/JBCCI/JC/VDA/277 dated: 22/10/2020) and latest notification on contribution towards Coal Mines Pension (Amendment) Scheme 2018 (Ref: CIL/C 5A (PC)/CMPS/2897 dated 23.06.2018

Table 3.3 Wage rate

(High Power Wage Committee Report: Notification No: CIL/C-5B/JBCCI/JC /VDA/277 dated: 22/10/2020)

Details of Wage element	Unskilled	Semi Skilled /Unskilled Supervisory	Skilled	Highly Skilled
Minimum Wages	787	817	847	877
D.A.	119	124	128	133
PF 12 % & 7% pension benefit and bonus wherever applicable as per bonus act	172.14	178.79	185.25	191.90
Total Rs.	**1078.14**	**1119.79**	**1160.25**	**1204.90**

Direct wages: The monthly salary of all the direct personnel constitute Direct wages. It has been determined based on 26 working days of wages for each month i.e the monthly salary of each category of direct personnel would be 26 x daily wage rate of respective category as per above HPC report.

Group Insurance : While calculating the total annual cost towards wages, payment of premium towards Group insurance of Rs. 15.0 lakhs has also been considered as per CIL notification on "Enhancement of Ex-gratia amount for fatal coal mines accident, from Rs. 5.0 lakh to 15.0 lakh" Ref No: CIL/C-5B/JBCCI-X/Ex-gratia/504 dated 14.11.2019. Please refer annexure for wages for each equipment.

3.5 Administrative expenses:

Support Employees: The employees involved in support services for the project have been categorized as support employees. This includes all the support functions like top management, administration, finance, purchase and stores, maintenance personnel and supervisory personnel not directly allocated to any particular equipment.

Apart from salaries of support employees, the expenses incurred on office establishment like rent, electricity, communication, vehicles, employees welfare, stationeries etc. are accounted in determination of administrative expenses. The details of expenses considered on these heads have been shown in Annexure.

3.6 Apportioning of Administrative expenses:

The administrative expenses have been apportioned on all the equipments based on the ratio of capital investment of the equipment with respect to total project cost. The ratio of capitalization and the apportioning of costs have been shown in annexure.

Based on the above methodology and assumptions, SOR for various activities have been determined.

4.1 Contractual transportation of Coal (surface to surface) in lead range of 0 to 40 km

4.1.1 Activity description:

The following elements have been considered as part of this activity:

- Loading of coal into coal tippers by payloaders
- Transportation of coal from face to specified coal stock site in various lead range

4.1.2 Equipments used and Fleet Size:

The HEMM operator uses the following equipments for this activity:

Equipment	Make	Capacity	Nos.
Payloader / Wheel loader	CAT950	168 Hp, 4.5 CuM	7
Coal Tippers	Tata Prima 3125	20 Te	36-419 Lead dependent

4.1.3 Schedule of Rates:

The schedule of rates (SOR) for Coal transportation is shown in table 4.1 below. The detailed calculation of unit costs of each factor is shown in respective annexure of equipments. (Pl. refer respective Annexure)

4.1.3.1 Schedule of Rates for Coal Transportation, Surface to Surface:

The SOR for Coal transportation Surface to Surface in the lead range of (0-40 Km) is shown in table 4.1 below. Table 4.6 (b)-I provides transportation rates applicable in lead range of 0 to 40 Km with weighment at both ends. The detailed calculation of unit costs of each factor is shown in respective Annexure II of equipments.

Schedule of Rates for Surface to Surface Transportation of Coal in the lead range of (0-40 kms)

Item No.	Description	Mean Lead (km)	Rate (Rs./Te.)	Mean Lead (km)	Rate (Rs./Te.)
1	**Transportation of coal (surface to surface-S2S):** Transportation of coal by suitably covered contractor's tipping trucks from ..... To ..... as per direction of Engineer in charge.	0.5	16.26	20.5	176.90
		1.5	27.06	21.5	183.99
		2.5	36.80	22.5	191.04
		3.5	45.92	23.5	198.05
		4.5	54.69	24.5	205.02
		5.5	63.20	25.5	211.97
		6.5	71.48	26.5	218.88
		7.5	79.62	27.5	225.76
		8.5	87.61	28.5	232.62
		9.5	95.46	29.5	239.44
		10.5	103.23	30.5	246.24
		11.5	110.89	31.5	253.02
		12.5	118.48	32.5	259.77
		13.5	125.96	33.5	266.50
		14.5	133.41	34.5	273.20
		15.5	140.79	35.5	279.89
		16.5	148.11	36.5	286.55
		17.5	155.38	37.5	293.22
		18.5	162.60	38.5	299.84
		19.5	169.77	39.5	306.45
	Note: The SOR in table above includes charges for weighment at one end.				
2.1	**Additional rate for weighment per occasion(Rs./te)** E.g. for transportation with weighment at both ends, Rs. 0.53 per ton shall be added to rate shown in this table for applicable lead. Accordingly, the description of item shall read as: "Transportation of coal by suitably covered tipping trucks from _____ to _____. Including weighment at both ends as per direction of Engineer-in-charge."				**0.53**

4.2 **Additional rates for Contractual transportation of Coal (Surface to Surface) on routes having one railway crossing based on cumulative hours of crossing remaining closed per day:**

In case of transportation of coal by tippers in the routes having railway crossings, it is probable that tippers may encounter closed level crossing when they arrive at the railway crossing. This will result into a significant time loss for the tippers. The total time loss will depend upon the traffic flow of passenger trains and goods train form that crossing. Hence, in order to compensate for the time loss, additional rates of payment have been determined for different time slabs based on cumulative hours of level crossing remaining closed per day. It has been assumed that if the total cumulative hours of crossing remaining closed is less than 1 hour per day, the probability of tippers encountering a closed level crossing will be very less or insignificant hence no additional payments will be made in such case. For other time slabs, the additional rate of payment per vehicle per trip for routes having one railway crossing is shown in table 4.1 (a) below. The detailed calculation of the same is shown in Annexure:

Table 4.1 (a)

Sl	Cumulative hours of railway crossing remaining closed per day	Unit	Additional rate of payment (Rs.)
1	>5hrs	Rs. Per Te. per trip	1.23
2	4-5 hrs		1.00
3	3-4 hrs		0.78
4	2-3 hrs		0.56
5	1-2 hrs		0.33
6	<1 hr		0.11

4.3 Additional rates for Contractual transportation of Coal (Surface to Surface) on routes having no entry restrictions

In case of transportation of coal by tippers in the routes in which **"No Entry"** restrictions is enforced for specified duration, the movement of tippers is obstructed, as it cannot pass through No Entry zone during specified period. Hence, there will be a considerable loss of time due to such enforcement of No Entry restrictions. The total loss will depend upon the duration of No Entry restriction and the transportation lead in which the coal was being transported. Hence, in order to compensate for the time loss, additional rates of payment per tone per hour of restriction for different lead slabs have been determined as shown in Table 4.1 (b) below.

Table 4.1 (b)

Additional rates for Contractual transportation of Coal (Surface to Surface) on routes having no entry restrictions notified by Govt. / local authorities

Sl	Cumulative hours of railway crossing remaining closed per day	Unit	Additional rate of payment (Rs.)
1	>5hrs	Rs. Per Te. per trip	1.23
2	4-5 hrs		1.00
3	3-4 hrs		0.78
4	2-3 hrs		0.56
5	1-2 hrs		0.33
6	<1 hr		0.11

However, the additional payment on account of hindrances caused due to **"No Entry"** restriction will be subjected to following qualifying criteria:

Qualifying Criteria for additional payment for hindrance caused due to enforcement of No Entry / Route restriction :

- In general Entry restriction / No entry notified by the Govt./ district authorities/ local authorities will only be treated as hindrance.

- No entry or route restriction of duration less than one hour (sixty Minutes); will not be considered as hindrance.
- Additional payment shall be made for each hindrance of in multiple of one hour and part thereof (rounded off to nearest complete hour) at applicable rates as mentioned in SOR.

4.4 Hiring of HEMM for contractual loading of Coal by contractor's payloader into contractor's tipping trucks:

4.4.1 Activity description:

The following elements have been considered as part of this activity:

- Loading of coal by payloader into tippers

4.4.2 Equipments used and Fleet Size:

The HEMM operator uses the following equipments for this activity:

Equipment	Make	Capacity	Nos.
Payloader / Wheel loader	CAT950	168 Hp, 4.5 CuM	5

4.4.3 Schedule of Rates:

The schedule of rates (SOR) for loading of Coal by payloader into tippers at stock pile, crusher site and at Surface miner site is shown in table 4.2 A below. The detailed calculation of unit costs of each factor is shown in Annexure of equipments. (Pl. refer respective annexure)

Table 4.2 A

Table 4.2 A SOR 2018-Contractual Loading of Coal by contractor's payloaders into contractors tipping trucks at Stock Pile		
Sl	Description	Rate (Rs.)
1	Loading of Coal by contractor's payloader into contractor's tipping trucks at stockpile (surface stockyard/quarry bed stock/face)	8.37
Total SOR (Rs. Per MT)		8.37

4.5 Contractual loading of Coal by contractor's payloader into railway wagon:

4.5.1 Activity description:

The following elements have been considered as part of this activity:

- Loading of coal by payloader into railway wagons
- Leveling of wagons
- Track cleaning

4.5.2 Equipments used and Fleet Size:

The HEMM operator uses the following equipments for this activity:

Equipment	Make	Capacity	Nos.
Payloader / Wheel loader	CAT950	168 Hp, 4.5 CuM	5

4.5.3 Schedule of Rates of Payloader :

The schedule of rates (SOR) for loading of Coal by payloader in railway wagons is shown in table 4.2 B below.

Table 4.2 B

SOR 2018-Loading of coal into railway wagons by contractor's pay loaders		
Sl	**Description**	**Rate (Rs.)**
1	Loading of coal into railway wagons by contractor's payloader(s) at railway siding including leveling of wagons, lime sprinkling at top of railway wagons, cleaning of track etc. as per instruction of engineer in charge.	**9.00**
	Total SOR (Rs. Per MT)	**9.00**

The detailed calculation of unit costs of each factor is shown in Annexure of equipments. (Pl. refer respective annexure)

4.6 IMPACT OF DIESEL AND WAGE RATES CHANGES ON SOR:

The SOR worked out in this report is based on the current diesel price and wages rates along with other costs prevailing at the time of preparation of the report. However, these costs are subjected to price variation with time. The change in price will result in increase or decrease in SOR as the case may be. Hence it is necessary to calculate the impact of changes in diesel price and wages on current SOR.

The impact on SOR because of changes in diesel and wage rates may be worked out as below:

Fractional change in HEMM hiring rates is proportional to fractional change in diesel rates:

$\Delta R / R \propto \Delta D/D$ ---------- (1)

Fractional change in HEMM hiring rates is proportional to fractional change in wage rates:

$\Delta R/ R_0 \propto \Delta W/ W_0$ ----------(2)

The new SOR can be updated with formula derived by combining relations 1 & 2:

$(R/R_0) \times 100 = a\,(D/D_0) + b\,(W/W_0) + c$ ----------(3)

Where

R : Revised / Updated Rate applicable for item under consideration

D : The new Price of Diesel

W : New wage rates

R_0 : Rate as per SOR

D_0 : Diesel Rate as considered in SOR

W_0 : Wage Rate as per SOR

a, b & c are arbitrary constants.

The values of a, b & c are dependent upon the lead distance and hence they change for different leads. A ready reckonner for these constants have been

developed which may be referred from the table 4.3 below while calculating the impact on price changes.:

Table 4.3

Payloader:

Position	a	b	c
Stockpile	60.22	9.20	30.58
Wagon loading	39.28	15.68	45.04

Coal tipper for Surface-to-surface coal transportation:

Mean Lead (km)	a	b	c
0.5	30.59	23.69	45.72
1.5	42.73	20.26	37.01
2.5	47.41	18.88	33.71
3.5	50.06	18.11	31.83
4.5	51.78	17.57	30.65
5.5	52.99	17.22	29.79
6.5	53.90	16.91	29.19
7.5	54.61	16.69	28.70
8.5	55.18	16.51	28.31
9.5	55.67	16.32	28.01
10.5	56.06	16.19	27.75
11.5	56.41	16.08	27.51
12.5	56.70	15.97	27.32
13.5	56.98	15.86	27.16
14.5	57.20	15.78	27.02
15.5	57.41	15.70	26.89
16.5	57.59	15.64	26.77
17.5	57.76	15.57	26.67
18.5	57.91	15.52	26.57
19.5	58.05	15.46	26.49

Mean Lead (km)	a	b	c
20.5	58.17	15.41	26.41
21.5	58.29	15.37	26.34
22.5	58.40	15.33	26.27
23.5	58.50	15.28	26.21
24.5	58.60	15.25	26.16
25.5	58.68	15.21	26.11
26.5	58.77	15.17	26.06
27.5	58.84	15.14	26.01
28.5	58.92	15.11	25.97
29.5	58.99	15.08	25.93
30.5	59.05	15.05	25.90
31.5	59.11	15.02	25.86
32.5	59.17	15.00	25.83
33.5	59.23	14.97	25.80
34.5	59.28	14.95	25.77
35.5	59.33	14.93	25.74
36.5	59.38	14.91	25.72
37.5	59.42	14.89	25.69
38.5	59.46	14.87	25.67
39.5	59.50	14.85	25.65

4.7 Extrapolation/Interpolation equation for Awarded Rate with respect to SOR :

SOR is used for preparation of estimates of rates for specific jobs at specified lead based on which bids are invited. In most of the cases, the awarded rate are either lower of higher than the estimated rate. In case there is a variation in lead during the contract period, the awarded rates are required to be revised for the new lead.

The extrapolation formula given above, derives new SOR at a new lead. Since the awarded rate and estimated rates (SOR) are different, it is required to determine new rates with respect to awarded rate. For such situations, the formula for arriving at new rate of award will be as follows:

1. **Formulae for extrapolation of awarded rate:**

(i) $$R_2 = R_1 + [\text{SOR rate at } D_2 - \text{SOR rate at } D_1] \times \frac{\text{Awarded rate at } D_1}{\text{SOR at } D_1}$$

Where R_1 = Awarded Rate
D_1 = Awarded Lead
D_2 = New Lead
R_2 = Desired awarded rate at New lead D_2

Annexure-I

Payloader

Normative Rates for Coal loading at Stockpile

Payloader

Description		Stockpile
No. of Payloaders (Avg. Bucket capacity 4.5 cu.m)		7
Avg. weight of the coal loaded in one Tipper (12 Wheeled)		20.00
Time taken to load one Tipper (Min)		4.00
Avg. no. of Tippers loaded per hour per payloader		15.0
working hours per day		19.5
Avg. no. of Tippers loaded per paylaoders per day		292
Avg. no. of Tippers loaded by all paylaoders per day		2046
Total coal loaded per day (MT) by all payloaders		40922
Total coal loaded per annum (MT) by all payloaders		13504375
Total hrs of run for all payloaders for coal loading per annum		45045
Avg. Diesel Consumption per hour		15.95
Total diesel consumption for all payloaders per day (Lt)		2177
Total diesel consumption for all payloaders per annum		718575
Diesel consumption per MT of loading (lt)		0.0532
Price of diesel (Rs.)	86.03	86.03
Total Cost of HSD per annum		61819007
Cost of Tyre Annexure		4546693
Repair & Maintenance (including lubricants) Annexure		8573847
Wages Annexure		9450605
Road Tax and Insurance Annexure		977137
Administrative Expenses Annexure		5465859
Interest on term Loan @ 10.5 % Annexure		2923906
Depreciation Annexure		8774259
Interest on Working Capital Loan @ % Annexure		214586
Total Cost		102745899
Add Margin @ 10% Cost		10274590
Total		113020489
Various costs per MT coal Loaded		
HSD		4.58
Tyre		0.34
Repair & Maintenance		0.63
Direct Wages		0.70
Road Tax and Insurance		0.07
Administrative Expenses		0.40
Interest onTerm Loan Expenses		0.22
Depreciation		0.65
Working Capital loan Interest		0.02
Margin		0.76
Total Cost per MT		**8.37**

Normative Rates for Wagon Loading

Description	Payloader Wagon loading
No. of Payloaders (Avg. Bucket 4.5 cu.m)	5
Avg. weight of the coal loaded in one Wagon as per records	65
Time taken to load one wagon (Min)	9.28
Avg. no. of Wagons loaded per hour	6.46
Avg. no. of wagons loaded by all paylaoders per hour	32.32
Hrs.required to load 59 wagons (one rake) by all paylaoders	1.83
No. of rakes available for loading per day	**4.20**
Total hrs required for each payloader for loading all rakes / day	7.67
Total hrs required for each payloader for loading all rakes in 330 days (per annum)	2530
Total average weight of coal loaded per rake (MT)	3835
Total coal loaded per day (MT) by all payloaders	16107
Total coal loaded per annum (MT) by all payloaders	5315310
Avg. Diesel Consumption per hour	15.95
Total diesel consumption for all payloaders per day (Lt)	612
Total diesel consumption for all payloaders per annum	201834
Diesel consumption per MT of loading (lt)	0.038
Price of diesel (Rs.)	86.03
Cost of HSD	17363744
Cost of Tyre Annexure	1220318
Repair & Maintenance (including lubricants) Annexure	6124176
Wages Annexure	6906211
Road Tax and Insurance Annexure	697955
Administrative Expenses Annexure	2732930
Interest on term Loan @ 10.5 % Annexure	2088505
Depreciation Annexure	6267328
Interest on Working Capital Loan @ % Annexure	106012
Total Cost	43507178
Add Margin @ 10% Cost	4350718
Total	47857896
Various costs per MT coal loaded into wagons	
HSD	3.27
Tyre	0.23
Repair & Maintenance	1.15
Direct Wages	1.30
Road Tax and Insurance	0.13
Administrative Expenses	0.51
Interest onTerm Loan Expenses	0.39
Depreciation	1.18
Working Capital loan Interest	0.02
Margin	0.82
Total Cost per MT	**9.00**

Tyre for Payloader

Sl. No.	Lead (Km)	Stock	Wagon Loading
1	Life of each Tyre (Hrs)	3870	4050
2	Hours of Operation per annum per payloader	6435	3163
3	Number of Tyre set required / Loader/Annum	1.66	0.78
4	No. of Tyres per payloader	4	4.00
5	No. of tyres to be changed per payloader per annum	6.7	3.1
6	Cost of Each Tyre (Rs.) (23.5R25)	97656	97656
7	Total Annual Cost of tyre / Payloder	649528	305079
8	No. of Payloaders	7	5
9	Total Annual Cost of Tyre for the fleet of payloaders	4546693	1525397

Repair and Maintenance

Payloader

Sl. No.	Description	Stock Cost (in Rs.)	Wagon Loading Cost (in Rs.)
1	Cost of Payloader as per present Market rate	11874937	11874937
2	Cost of Repair and Maintenance per Payloader per annum	1224835	1224835
3	Total no. of Payloaders	7	5
4	Present Cost of Repair and Maintenance for all Payloaders per annum	8573847	6124176

(High Power Wage Committee Report: Notification No:CIL/C-5B/JBCCI/JC/VDA/277 dated: 22/10/2020)

Details of Wage element	Unskilled	Supervisory	Skilled	Highly Skilled
Minimum Wages	787	817	847	877
D.A.	119	124	128	133
Minimum basic	906	941	975	1010
PF 12 % & 7% pension benefit and bonus wherever applicable as per bonus act	172.14	178.79	185.25	191.9
Total Rs.	1078.14	1119.79	1160.25	1201.90

	Stock	Wagon Loading
No. of Payloaders	7	5
No. of Drivers with 26% leave reserve	26	19
Wages Per Day (Including Benefit)	1160	1160
Total Annual Wages of all Drivers	9411948	6877962
Group insurance premium	38656.8	28249
Total Wages per annum	9450605	6906211

Insurance, Road Tax, Permit & Fitness

Insurance

Cost of Payloader (Rs.) 11874937
Life of Payloader (Years) 9

Year	Equipment value Rs. (IDV)	Own Damage premium	% No claim bonus	Liability (Third party, driver, PA etc)	Premium with GST@18%	Premium without GST
1st Year	11874937	233936	0	17751	296991	251687
2nd Year	9499950	187149	20	17751	197615	167470
3rd Year	7599960	149719	25	17751	153448	130040
4th Year	6079968	119775	35	17751	112814	95605
5th Year	4863974	95820	50	17751	77480	65661
6th Year	3891179	76656	50	17751	66173	56079
7th Year	3112944	61325	50	17751	57128	48413
8th Year	2490355	49060	50	17751	49892	42281
9th Year	1992284	39248	50	17751	44102	37375
Total					**1055643**	**894613**

Avg. Premium with GST **117294** **99401**

Registration **1500** **1500**
Hypothecation endorsement **3000** **3000**

Road Tax
Quarterly Tax (Rs.)
Annual Road Tax (Rs.) **32130** **32130**

Permit
Charges (Rs.)
Fitness **Charges (Rs.)** **3060** **3060**
500 **500**

Total Charges Per Annum per payloader **157484** **139591**

Interest on Term Loan

Payloader No. of payloaders 1

Particulars	1st year	2nd year	3rd year	4th year	5th year	6th year	7th year	8th year	9th year
Opening Balance @ 67% of Total Cost	7956208	7072185	6188162	5304139	4420116	3536092	2652069	1768046	884023
Re-payment (Nine Equated Installments)	884023	884023	884023	884023	884023	884023	884023	884023	884023
Closing Balance	7072185	6188162	5304139	4420116	3536092	2652069	1768046	884023	0
Interest @ 10.5%	788991	696168	603346	510523	417701	324878	232056	139234	46411

Average Interest Per Annum **417701**

Payloader

Depreciation

Sl. No.	Description	Cost (Rs.)
1	Cost of one payloader	11874937
2	Loan on Capitalised Cost @ 67%	7956208
3	Salvage Value @ 5%	593747
4	Depreciative Value	11281190
5	Depreciation per year for one Payloader	1253466

Paylaoder

Interest on Working Capital

Current Assets	Period	Stock Amount (Rs.)	Wagon Loading Amount (Rs.)
Diesel	7 Days	1311312	460402
Tyre	3 Months	1136673	381349
Spares & Other maint. Stores	3 Months	2143462	1531044
Total Current Asset (A)		4591447	2372796
Bank Loan 75 % A		3443585	1779597
Less Current Liabilities			
Diesel (3 Days)	3 Days	561991	197315
Tyre(1 Month)	1 Month	378891	127116
Spares & Other maint. Stores (1 months)	1 Month	714487	510348
Total Current Liabilities (B)		1655369	834779
Net Current Asset (A- B)		1788216	944818
Interest @ 12%		214586	113378

Annexure-II

Surface to surface coal transportation With Tippers

Rates for Tipper surface to Surface	1	2	3	4	5	6	7	8
Description	0-1 km	1-2 km	2-3 km	3-4 km	4-5 km	5-6 km	6-7 km	7-8 km
Lead (Km)	0.5	1.5	2.5	3.5	4.5	5.5	6.5	7.5
Distance per trip (Km)	1	3	5	7	9	11	13	15
Travel time (Minute)	9.98	18.27	25.79	32.79	39.45	45.87	52.10	58.17
average waiting/heaping time, loading & unloading time, weighment & challan generation/submission time (minute)	9.70	9.70	9.70	9.70	9.70	9.70	9.70	9.70
Total Average trip time	19.68	27.98	35.49	42.49	49.15	55.57	61.80	67.87
No. of Tippers	36	51	64	77	89	101	112	123
Hours worked in a day	19.5	19.5	19.5	19.5	19.5	19.5	19.5	19.5
No. of trips per day per tipper	59.44	41.82	32.97	27.54	23.80	21.05	18.93	17.24
No. of trips per annum (330 days) per Tipper	19616	13800	10879	9087	7855	6948	6248	5689
No. of trips per annum (330 days) by allTipper	706178	703823	696287	699676	699076	701714	699731	699699
Distance covered per day per tipper (Km)	59.4	125.5	164.8	192.7	214.2	231.6	246.1	258.6
Total Distance covered per tipper (Km)/ Annum	19616	41401	54397	63607	70693	76424	81219	85329
Total Distance covered per Annum (KM) by all tipper	706178	2111469	3481437	4897732	6291680	7718849	9096507	10495489
Average coal transported per trip by 12 wheel Tipper (T)	20.00	20.00	20.00	20.00	20.00	20.00	20.00	20.00
Coal transported per tipper per day(T)	1188.9	836.4	659.4	550.7	476.0	421.1	378.6	344.8
Coal transported per tipper per annum (T)	392321	276009	217590	181734	157096	138953	124952	113772
Total Coal transported by all tipper per day(T)	42799	42656	42199	42405	42368	42528	42408	42406
Total Coal transported by all tipper per annum (T)	14123557	14076458	13925747	13993519	13981510	14034270	13994627	13993985
HSD consumption (Lit.)/KM	1.050	0.814	0.737	0.694	0.664	0.643	0.626	0.612

Total HSD Consumption		741547	1718436	2565088	3396732	4180168	4961929	5693696	6424565
Cost of HSD @ Rs: per litre	86.03	63795247	147837092	220674524	292220861	359619885	426874715	489828664	552705361
Tyre Annexure		6003647	16287543	25746007	35260494	44417313	53661474	62446005	71284105
Repair & Maintenance Annexure		19769616	28006956	35145984	42285012	48874884	55464756	61505472	67546188
Lubricants Annexure		7421760	10514160	13194240	15874320	18348240	20822160	23089920	25357680
Wages Annexure		49433933	70152566	87963322	105774077	122130893	138851194	153754070	169020432
Road Tax and Insurance Annexure		2094228	2966823	3723072	4479321	5177397	5875473	6515376	7155279
Administrative Expenses Annexure		35671919	35671919	35671919	35671919	35671919	35671919	35671919	35671919
Interest on term Loan @ % Annexure	10.5	4423704	6266914	7864363	9461811	10936379	12410947	13762635	15114322
Depreciation Annexure		19912433	28209280	35399881	42590482	49227960	55865437	61949792	68034147
Interest on Working Capital Loan @ % Annexure	12	184608	327997	453632	578352	695523	812794	922136	1031549
Total Cost		208711095	346241250	465836944	584196649	695100393	806310869	909445989	1012920981
Add Margin @ 10% Cost		20871110	34624125	46583694	58419665	69510039	80631087	90944599	101292098
Total		229582205	380865375	512420638	642616314	764610432	886941956	1000390588	1114213079
Various costs per MT coal transported									
HSD		4.52	10.50	15.85	20.88	25.72	30.42	35.00	39.50
Tyre		0.43	1.16	1.85	2.52	3.18	3.82	4.46	5.09
Repair & Maintenance		1.40	1.99	2.52	3.02	3.50	3.95	4.39	4.83
Lubricants		0.53	0.75	0.95	1.13	1.31	1.48	1.65	1.81
Direct Wages		3.50	4.98	6.32	7.56	8.74	9.89	10.99	12.08
Road Tax and Insurance		0.15	0.21	0.27	0.32	0.37	0.42	0.47	0.51
Administrative Expenses		2.53	2.53	2.56	2.55	2.55	2.54	2.55	2.55
Interest onTerm Loan Expenses		0.31	0.45	0.56	0.68	0.78	0.88	0.98	1.08
Depreciation		1.41	2.00	2.54	3.04	3.52	3.98	4.43	4.86
Working Capital loan Interest		0.01	0.02	0.03	0.04	0.05	0.06	0.07	0.07
Margin		1.48	2.46	3.35	4.17	4.97	5.75	6.50	7.24
Total Cost per MT(Diesel Cost @ Rs. Per litre	**86.03**	**16.26**	**27.06**	**36.80**	**45.92**	**54.69**	**63.20**	**71.48**	**79.62**

Rates for Tipper surface to Surface	9	10	11	12	13	14	15	16
Description	8-9 km	9-10 km	10-11 km	11-12 km	12-13 km	13-14 km	14-15 km	15-16 km
Lead (Km)	8.5	9.5	10.5	11.5	12.5	13.5	14.5	15.5
Distance per trip (Km)	17	19	21	23	25	27	29	31
Travel time (Minute)	64.11	69.95	75.69	81.34	86.92	92.44	97.89	103.29
average waiting/heaping time, loading & unloading time, weighment & challan generation/submission time (minute)	9.70	9.70	9.70	9.70	9.70	9.70	9.70	9.70
Total Average trip time	73.82	79.65	85.39	91.05	96.63	102.14	107.59	112.99
No. of Tippers	134	144	154	165	175	185	194	204
Hours worked in a day	19.5	19.5	19.5	19.5	19.5	19.5	19.5	19.5
No. of trips per day per tipper	15.85	14.69	13.70	12.85	12.11	11.45	10.87	10.35
No. of trips per annum (330 days) per Tipper	5231	4847	4522	4241	3996	3780	3589	3417
No. of trips per annum (330 days) by allTipper	700891	698025	696324	699718	699262	699315	696170	697087
Distance covered per day per tipper (Km)	269.5	279.1	287.7	295.6	302.7	309.3	315.4	321.0
Total Distance covered per tipper (Km)/ Annum	88919	92100	94953	97536	99895	102062	104067	105930
Total Distance covered per Annum (KM) by all tipper	11915153	13262467	14622811	16093521	17481557	18881514	20188933	21609685
Average coal transported per trip by 12 wheel Tipper (T)	20.00	20.00	20.00	20.00	20.00	20.00	20.00	20.00
Coal transported per tipper per day(T)	317.0	293.8	274.0	257.0	242.2	229.1	217.5	207.1
Coal transported per tipper per annum (T)	104611	96948	90432	84814	79916	75602	71770	68342
Total Coal transported by all tipper per day(T)	42478	42305	42201	42407	42380	42383	42192	42248
Total Coal transported by all tipper per annum (T)	14017827	13960492	13926486	13994366	13985246	13986306	13923402	13941732
HSD consumption (Lit.)/KM	0.601	0.591	0.582	0.574	0.567	0.561	0.556	0.551

Total HSD Consumption		7155644	7833129	8510015	9242805	9920453	10598442	11219092	11897671
Cost of HSD @ Rs. per litre	86.03	615600016	673884121	732116624	795158514	853456537	911783961	965178487	1023556642
Tyre Annexure		80181019	88523087	96895237	105942342	114393125	122877330	130721086	139262761
Repair & Maintenance Annexure		73586904	79078464	84570024	90610740	96102300	101593860	106536264	112027824
Lubricants Annexure		27625440	29687040	31748640	34016400	36078000	38139600	39995040	42056640
Wages Annexure		184286794	197735731	211548154	226814515	240626938	254075875	266434358	280246781
Road Tax and Insurance Annexure		7795182	8376912	8958642	9598545	10180275	10762005	11285562	11867292
Administrative Expenses Annexure		35671919	35671919	35671919	35671919	35671919	35671919	35671919	35671919
Interest on term Loan @ % Annexure	10.5	16466009	17694816	18923623	20275310	21504117	22732923	23838849	25067656
Depreciation Annexure		74118501	79649733	85180964	91265319	96796550	102327781	107305890	112837121
Interest on Working Capital Loan @ % Annexure	12	1141123	1242277	1343464	1453535	1554972	1656517	1749163	1850893
Total Cost		1116472908	1211544100	1306957290	1410807139	1506364732	1601621772	1688716618	1784445529
Add Margin @ 10% Cost		111647291	121154410	130695729	141080714	150636473	160162177	168871662	178444553
Total		1228120198	1332698510	1437653019	1551887853	1657001205	1761783950	1857588280	1962890081
Various costs per MT coal transported									
HSD		43.92	48.27	52.57	56.82	61.03	65.19	69.32	73.42
Tyre		5.72	6.34	6.96	7.57	8.18	8.79	9.39	9.99
Repair & Maintenance		5.25	5.66	6.07	6.47	6.87	7.26	7.65	8.04
Lubricants		1.97	2.13	2.28	2.43	2.58	2.73	2.87	3.02
Direct Wages		13.15	14.16	15.19	16.21	17.21	18.17	19.14	20.10
Road Tax and Insurance		0.56	0.60	0.64	0.69	0.73	0.77	0.81	0.85
Administrative Expenses		2.54	2.56	2.56	2.55	2.55	2.55	2.56	2.56
Interest onTerm Loan Expenses		1.17	1.27	1.36	1.45	1.54	1.63	1.71	1.80
Depreciation		5.29	5.71	6.12	6.52	6.92	7.32	7.71	8.09
Working Capital loan Interest		0.08	0.09	0.10	0.10	0.11	0.12	0.13	0.13
Margin		7.96	8.68	9.38	10.08	10.77	11.45	12.13	12.80
Total Cost per MT(Diesel Cost @ Rs. Per litre	**86.03**	**87.61**	**95.46**	**103.23**	**110.89**	**118.48**	**125.96**	**133.41**	**140.79**

Rates for Tipper surface to Surface	17	18	19	20	21	22	23	24
Description	16-17 km	17-18 km	18-19 km	19-20 km	20-21 km	21-22 km	22-23 km	23-24 km
Lead (Km)	16.5	17.5	18.5	19.5	20.5	21.5	22.5	23.5
Distance per trip (Km)	33	35	37	39	41	43	45	47
Travel time (Minute)	108.63	113.93	119.19	124.40	129.58	134.72	139.83	144.90
average waiting/heaping time, loading & unloading time, weighment & challan generation/submission time (minute)	9.70	9.70	9.70	9.70	9.70	9.70	9.70	9.70
Total Average trip time	118.34	123.64	128.89	134.11	139.28	144.42	149.53	154.60
No. of Tippers	214	223	233	242	251	261	270	279
Hours worked in a day	19.5	19.5	19.5	19.5	19.5	19.5	19.5	19.5
No. of trips per day per tipper	9.89	9.46	9.08	8.72	8.40	8.10	7.82	7.57
No. of trips per annum (330 days) per Tipper	3263	3123	2996	2879	2772	2673	2582	2497
No. of trips per annum (330 days) by allTipper	698221	696401	697963	696736	695792	697761	697171	696764
Distance covered per day per tipper (Km)	326.3	331.2	335.9	340.3	344.4	348.4	352.1	355.7
Total Distance covered per tipper (Km)/ Annum	107670	109301	110835	112284	113655	114957	116195	117376
Total Distance covered per Annum (KM) by all tipper	23041288	24374040	25824621	27172701	28527463	30003738	31372717	32747924
Average coal transported per trip by 12 wheel Tipper (T)	20.00	20.00	20.00	20.00	20.00	20.00	20.00	20.00
Coal transported per tipper per day(T)	197.7	189.3	181.5	174.5	168.0	162.0	156.5	151.4
Coal transported per tipper per annum (T)	65254	62458	59911	57581	55442	53468	51642	49947
Total Coal transported by all tipper per day(T)	42316	42206	42301	42226	42169	42289	42253	42228
Total Coal transported by all tipper per annum (T)	13964417	13928023	13959255	13934718	13915836	13955227	13943430	13935287
HSD consumption (Lit.)/KM	0.546	0.541	0.537	0.534	0.530	0.527	0.524	0.521

Total HSD Consumption		12576948	13197773	13878153	14499405	15120786	15802901	16424987	17047320
Cost of HSD @ Rs. per litre	86.03	1081994796	1135404439	1193937508	1247383809	1300841226	1359523615	1413041593	1466580941
Tyre Annexure		147837388	155745677	164376441	172325742	180292248	189000198	197006822	205030350
Repair & Maintenance Annexure		117519384	122461788	127953348	132895752	137838156	143329716	148272120	153214524
Lubricants Annexure		44118240	45973680	48035280	49890720	51746160	53807760	55663200	57518640
Wages Annexure		294059203	306417686	320230109	332588592	344947075	358759498	371117981	383476464
Road Tax and Insurance Annexure		12449022	12972579	13554309	14077866	14601423	15183153	15706710	16230267
Administrative Expenses Annexure		35671919	35671919	35671919	35671919	35671919	35671919	35671919	35671919
Interest on term Loan @ % Annexure	10.5	26296463	27402389	28631195	29737121	30843047	32071854	33177780	34283706
Depreciation Annexure		118368353	123346461	128877692	133855801	138833909	144365140	149343249	154321357
Interest on Working Capital Loan @ % Annexure	12	1952754	2045575	2147654	2240607	2333611	2436006	2529161	2622375
Total Cost		1880267522	1967442192	2063415455	2150667929	2237948775	2334148859	2421530534	2508950543
Add Margin @ 10% Cost		188026752	196744219	206341546	215066793	223794877	233414886	242153053	250895054
Total		2068294274	2164186411	2269757001	2365734721	2461743652	2567563745	2663683587	2759845597
Various costs per MT coal transported									
HSD		77.48	81.52	85.53	89.52	93.48	97.42	101.34	105.24
Tyre		10.59	11.18	11.78	12.37	12.96	13.54	14.13	14.71
Repair & Maintenance		8.42	8.79	9.17	9.54	9.91	10.27	10.63	10.99
Lubricants		3.16	3.30	3.44	3.58	3.72	3.86	3.99	4.13
Direct Wages		21.06	22.00	22.94	23.87	24.79	25.71	26.62	27.52
Road Tax and Insurance		0.89	0.93	0.97	1.01	1.05	1.09	1.13	1.16
Administrative Expenses		2.55	2.56	2.56	2.56	2.56	2.56	2.56	2.56
Interest onTerm Loan Expenses		1.88	1.97	2.05	2.13	2.22	2.30	2.38	2.46
Depreciation		8.48	8.86	9.23	9.61	9.98	10.34	10.71	11.07
Working Capital loan Interest		0.14	0.15	0.15	0.16	0.17	0.17	0.18	0.19
Margin		13.46	14.13	14.78	15.43	16.08	16.73	17.37	18.00
Total Cost per MT(Diesel Cost @ Rs. Per litre	**86.03**	**148.11**	**155.38**	**162.60**	**169.77**	**176.90**	**183.99**	**191.04**	**198.05**

Rates for Tipper surface to Surface	25	26	27	28	29	30	31	32
Description	24-25 km	25-26 km	26-27 km	27-28 km	28-29 km	29-30 km	30-31 km	31-32 km
Lead (Km)	24.5	25.5	26.5	27.5	28.5	29.5	30.5	31.5
Distance per trip (Km)	49	51	53	55	57	59	61	63
Travel time (Minute)	149.94	154.96	159.95	164.91	169.85	174.76	179.65	184.52
average waiting/heaping time, loading & unloading time, weighment & challan generation/submission time (minute)	9.70	9.70	9.70	9.70	9.70	9.70	9.70	9.70
Total Average trip time	159.65	164.66	169.65	174.61	179.55	184.47	189.36	194.23
No. of Tippers	288	297	306	315	324	333	342	350
Hours worked in a day	19.5	19.5	19.5	19.5	19.5	19.5	19.5	19.5
No. of trips per day per tipper	7.33	7.11	6.90	6.70	6.52	6.34	6.18	6.02
No. of trips per annum (330 days) per Tipper	2418	2345	2276	2211	2150	2093	2039	1988
No. of trips per annum (330 days) by allTipper	696515	696402	696407	696516	696715	696993	697339	695759
Distance covered per day per tipper (Km)	359.1	362.4	365.5	368.5	371.4	374.2	376.9	379.5
Total Distance covered per tipper (Km)/ Annum	118504	119584	120620	121614	122570	123491	124379	125237
Total Distance covered per Annum (KM) by all tipper	34129226	35516489	36909583	38308376	39712743	41122560	42537706	43832827
Average coal transported per trip by 12 wheel Tipper (T)	20.00	20.00	20.00	20.00	20.00	20.00	20.00	20.00
Coal transported per tipper per day(T)	146.6	142.1	137.9	134.0	130.3	126.9	123.6	120.5
Coal transported per tipper per annum (T)	48369	46896	45517	44223	43007	41861	40780	39758
Total Coal transported by all tipper per day(T)	42213	42206	42206	42213	42225	42242	42263	42167
Total Coal transported by all tipper per annum (T)	13930296	13928035	13928144	13930319	13934296	13939851	13946789	13915183
HSD consumption (Lit.)/KM	0.518	0.515	0.512	0.510	0.508	0.506	0.503	0.501
Total HSD Consumption	17669930	18292839	18916063	19539615	20163504	20787736	21412315	21974461

Cost of HSD @ Rs. per litre	86.03	1520144098	1573732942	1627348908	1680993068	1734666211	1788368891	1842101474	1890462854
Tyre Annexure		213070655	221127556	229200841	237290270	245395584	253516515	261652787	269035445
Repair & Maintenance Annexure		158156928	163099332	168041736	172984140	177926544	182868948	187811352	192204600
Lubricants Annexure		59374080	61229520	63084960	64940400	66795840	68651280	70506720	72156000
Wages Annexure		395834947	408193430	420551914	432910397	445268880	457627363	469985846	480890390
Road Tax and Insurance Annexure		16753824	17277381	17800938	18324495	18848052	19371609	19895166	20360550
Administrative Expenses Annexure		35671919	35671919	35671919	35671919	35671919	35671919	35671919	35671919
Interest on term Loan @ % Annexure	10.5	35389632	36495558	37601484	38707410	39813336	40919262	42025188	43008233
Depreciation Annexure		159299465	164277573	169255682	174233790	179211898	184190007	189168115	193593100
Interest on Working Capital Loan @ % Annexure	12	2715651	2808989	2902390	2995855	3089384	3182975	3276629	3360744
Total Cost		2596411198	2683914202	2771460772	2859051744	2946687648	3034368769	3122095197	3200743836
Add Margin @ 10% Cost		259641120	268391420	277146077	285905174	294668765	303436877	312209520	320074384
Total		2856052318	2952305622	3048606849	3144956918	3241356413	3337805646	3434304716	3520818219
Various costs per MT coal transported									
HSD		109.13	112.99	116.84	120.67	124.49	128.29	132.08	135.86
Tyre		15.30	15.88	16.46	17.03	17.61	18.19	18.76	19.33
Repair & Maintenance		11.35	11.71	12.06	12.42	12.77	13.12	13.47	13.81
Lubricants		4.26	4.40	4.53	4.66	4.79	4.92	5.06	5.19
Direct Wages		28.42	29.31	30.19	31.08	31.95	32.83	33.70	34.56
Road Tax and Insurance		1.20	1.24	1.28	1.32	1.35	1.39	1.43	1.46
Administrative Expenses		2.56	2.56	2.56	2.56	2.56	2.56	2.56	2.56
Interest onTerm Loan Expenses		2.54	2.62	2.70	2.78	2.86	2.94	3.01	3.09
Depreciation		11.44	11.79	12.15	12.51	12.86	13.21	13.56	13.91
Working Capital loan Interest		0.19	0.20	0.21	0.22	0.22	0.23	0.23	0.24
Margin		18.64	19.27	19.90	20.52	21.15	21.77	22.39	23.00
Total Cost per MT(Diesel Cost @ Rs. Per litre	**86.03**	**205.02**	**211.97**	**218.88**	**225.76**	**232.62**	**239.44**	**246.24**	**253.02**

Rates for Tipper surface to Surface	33	34	35	36	37	38	39	40
Description	32-33 km	33-34 km	34-35 km	35-36 km	36-37 km	37-38 km	38-39 km	39-40 km
Lead (Km)	32.5	33.5	34.5	35.5	36.5	37.5	38.5	39.5
Distance per trip (Km)	65	67	69	71	73	75	77	79
Travel time (Minute)	189.37	194.20	199.01	203.80	208.57	213.33	218.07	222.79
average waiting/heaping time, loading & unloading time, weighment & challan generation/submission time (minute)	9.70	9.70	9.70	9.70	9.70	9.70	9.70	9.70
Total Average trip time	199.08	203.90	208.71	213.50	218.28	223.03	227.77	232.49
No. of Tippers	359	368	377	385	394	402	411	419
Hours worked in a day	19.5	19.5	19.5	19.5	19.5	19.5	19.5	19.5
No. of trips per day per tipper	5.88	5.74	5.61	5.48	5.36	5.25	5.14	5.03
No. of trips per annum (330 days) per Tipper	1939	1894	1850	1808	1769	1731	1695	1661
No. of trips per annum (330 days) by allTipper	696269	696822	697415	696234	696931	695921	696700	695835
Distance covered per day per tipper (Km)	382.0	384.4	386.8	389.1	391.3	393.4	395.5	397.6
Total Distance covered per tipper (Km)/ Annum	126065	126867	127644	128396	129127	129836	130525	131196
Total Distance covered per Annum (KM) by all tipper	45257456	46687100	48121653	49432613	50875944	52194067	53645871	54970940
Average coal transported per trip by 12 wheel Tipper (T)	20.00	20.00	20.00	20.00	20.00	20.00	20.00	20.00
Coal transported per tipper per day(T)	117.5	114.8	112.1	109.6	107.2	104.9	102.7	100.6
Coal transported per tipper per annum (T)	38789	37871	36998	36168	35377	34623	33903	33214
Total Coal transported by all tipper per day(T)	42198	42232	42268	42196	42238	42177	42224	42172
Total Coal transported by all tipper per annum (T)	13925371	13936448	13948305	13924680	13938615	13918418	13933992	13916694
HSD consumption (Lit.)/KM	0.499	0.497	0.496	0.494	0.492	0.491	0.489	0.487
Total HSD Consumption	22599574	23225046	23850875	24413646	25040039	25603097	26230062	26793432

Cost of HSD @ Rs. per litre	86.03	1944241374	1998050716	2051890746	2100305928	2154194539	2202634392	2256572269	2305038992
Tyre Annexure		277198087	285375356	293566964	300990835	309207284	316649655	324890247	332350800
Repair & Maintenance Annexure		197147004	202089408	207031812	211425060	216367464	220760712	225703116	230096364
Lubricants Annexure		74011440	75866880	77722320	79371600	81227040	82876320	84731760	86381040
Wages Annexure		493248874	505607357	517965840	528870384	541228867	552496896	564855379	575759923
Road Tax and Insurance Annexure		20884107	21407664	21931221	22396605	22920162	23385546	23909103	24374487
Administrative Expenses Annexure		35671919	35671919	35671919	35671919	35671919	35671919	35671919	35671919
Interest on term Loan @ % Annexure	10.5	44114159	45220085	46326011	47309057	48414983	49398028	50503954	51486999
Depreciation Annexure		198571208	203549316	208527425	212952410	217930518	222355503	227333612	231758597
Interest on Working Capital Loan @ % Annexure	12	3454502	3548321	3642202	3726464	3820446	3904774	3998857	4083252
Total Cost		3288542674	3376387023	3464276460	3543020261	3630983222	3710133746	3798170216	3877002374
Add Margin @ 10% Cost		328854267	337638702	346427646	354302026	363098322	371013375	379817022	387700237
Total		3617396942	3714025725	3810704106	3897322287	3994081544	4081147120	4177987238	4264702611
Various costs per MT coal transported									
HSD		139.62	143.37	147.11	150.83	154.55	158.25	161.95	165.63
Tyre		19.91	20.48	21.05	21.62	22.18	22.75	23.32	23.88
Repair & Maintenance		14.16	14.50	14.84	15.18	15.52	15.86	16.20	16.53
Lubricants		5.31	5.44	5.57	5.70	5.83	5.95	6.08	6.21
Direct Wages		35.42	36.28	37.13	37.98	38.83	39.70	40.54	41.37
Road Tax and Insurance		1.50	1.54	1.57	1.61	1.64	1.68	1.72	1.75
Administrative Expenses		2.56	2.56	2.56	2.56	2.56	2.56	2.56	2.56
Interest onTerm Loan Expenses		3.17	3.24	3.32	3.40	3.47	3.55	3.62	3.70
Depreciation		14.26	14.61	14.95	15.29	15.64	15.98	16.32	16.65
Working Capital loan Interest		0.25	0.25	0.26	0.27	0.27	0.28	0.29	0.29
Margin		23.62	24.23	24.84	25.44	26.05	26.66	27.26	27.86
Total Cost per MT(Diesel Cost @ Rs. Per litre	**86.03**	**259.77**	**266.50**	**273.20**	**279.89**	**286.55**	**293.22**	**299.84**	**306.45**

Rates for Tipper surface to Surface

	Tyre for Tipper							
	1	2	3	4	5	6	7	8
Lead (Km)	**0.5**	**1.5**	**2.5**	**3.5**	**4.5**	**5.5**	**6.5**	**7.5**
Life of each Tyre(Km)	22000	24246	25291	25979	26493	26903	27245	27537
Distance covered per annum / Tipper (Km)	19616	41401	54397	63607	70693	76424	81219	85329
Number of Tyre set required / Tipper/Annum	10.7	20.5	25.8	29.4	32.0	34.1	35.8	37.2
Cost of Each Set of Tyre(Rs.) (10.00-20)	16406	16406	16406	16406	16406	16406	16406	16406
Total Annual Cost / Tipper	175545	336172	423454	482030	525338	559265	586899	610048
No. of Tippers	36	51	64	77	89	101	112	123
Total Annual Cost of Tyre for the fleet	6319629	17144782	27101060	37116309	46755066	56485763	65732637	75035900
Salvage Value Adjustment								
Assuming Salvage Value of 5%	315981	857239	1355053	1855815	2337753	2824288	3286632	3751795
Total tyre cost after adjusting salvage value	6003647	16287543	25746007	35260494	44417313	53661474	62446005	71284105

Rates for Tipper surface to Surface

	9	10	11	12	13	14	15	16
Lead (Km)	**8.5**	**9.5**	**10.5**	**11.5**	**12.5**	**13.5**	**14.5**	**15.5**
Life of each Tyre(Km)	27793	28021	28226	28412	28582	28740	28886	29022
Distance covered per annum / Tipper (Km)	88919	92100	94953	97536	99895	102062	104067	105930
Number of Tyre set required / Tipper/Annum	38.4	39.4	40.4	41.2	41.9	42.6	43.2	43.8
Cost of Each Set of Tyre(Rs.) (10.00-20)	16406	16406	16406	16406	16406	16406	16406	16406
Total Annual Cost / Tipper	629859	647099	662305	675868	688079	699160	709284	718590
No. of Tippers	134	144	154	165	175	185	194	204
Total Annual Cost of Tyre for the fleet	84401072	93182197	101994986	111518255	120413815	129344558	137601143	146592380
Salvage Value Adjustment								
Assuming Salvage Value of 5%	4220054	4659110	5099749	5575913	6020691	6467228	6880057	7329619
Total tyre cost after adjusting salvage value	80181019	88523087	96895237	105942342	114393125	122877330	130721086	139262761

Rates for Tipper surface to Surface								
Lead (Km)	**17**	**18**	**19**	**20**	**21**	**22**	**23**	**24**
Life of each Tyre(Km)	**16.5**	**17.5**	**18.5**	**19.5**	**20.5**	**21.5**	**22.5**	**23.5**
Distance covered per annum / Tipper (Km)	29150	29270	29384	29491	29594	29691	29784	29873
Number of Tyre set required / Tipper/Annum	107670	109301	110835	112284	113655	114957	116195	117376
Cost of Each Set of Tyre(Rs.) (10.00-20)	44.3	44.8	45.3	45.7	46.1	46.5	46.8	47.1
Total Annual Cost / Tipper	16406	16406	16406	16406	16406	16406	16406	16406
No. of Tippers	727188	735170	742609	749568	756101	762251	768058	773553
Total Annual Cost of Tyre for the fleet	214	223	233	242	251	261	270	279
Salvage Value Adjustment	155618303	163942817	173027833	181395518	189781313	198947577	207375602	215821422
Assuming Salvage Value of 5%	7780915	8197141	8651392	9069776	9489066	9947379	10368780	10791071
Total tyre cost after adjusting salvage value	147837388	155745677	164376441	172325742	180292248	189000198	197006822	205030350

Rates for Tipper surface to Surface								
Lead (Km)	**25**	**26**	**27**	**28**	**29**	**30**	**31**	**32**
Life of each Tyre(Km)	**24.5**	**25.5**	**26.5**	**27.5**	**28.5**	**29.5**	**30.5**	**31.5**
Distance covered per annum / Tipper (Km)	29958	30040	30119	30195	30268	30338	30406	30472
Number of Tyre set required / Tipper/Annum	118504	119584	120620	121614	122570	123491	124379	125237
Cost of Each Set of Tyre(Rs.) (10.00-20)	47.5	47.8	48.1	48.3	48.6	48.8	49.1	49.3
Total Annual Cost / Tipper	16406	16406	16406	16406	16406	16406	16406	16406
No. of Tippers	778767	783723	788445	792950	797257	801380	805333	809129
Total Annual Cost of Tyre for the fleet	288	297	306	315	324	333	342	350
Salvage Value Adjustment	224284900	232765849	241264043	249779231	258311141	266859490	275423986	283195206
Assuming Salvage Value of 5%	11214245	11638292	12063202	12488962	12915557	13342974	13771199	14159760
Total tyre cost after adjusting salvage value	213070655	221127556	229200841	237290270	245395584	253516515	261652787	269035445

Rates for Tipper surface to Surface								
Lead (Km)	**32.5**	**33.5**	**34.5**	**35.5**	**36.5**	**37.5**	**38.5**	**39.5**
Life of each Tyre(Km)	30536	30598	30658	30717	30774	30829	30883	30935
Distance covered per annum / Tipper (Km)	126065	126867	127644	128396	129127	129836	130525	131196
Number of Tyre set required / Tipper/Annum	49.5	49.8	50.0	50.2	50.4	50.5	50.7	50.9
Cost of Each Set of Tyre(Rs.) (10.00-20)	16406	16406	16406	16406	16406	16406	16406	16406
Total Annual Cost / Tipper	812778	816291	819676	822941	826095	829143	832092	834947
No. of Tippers	359	368	377	385	394	402	411	419
Total Annual Cost of Tyre for the fleet	291787460	300395112	309017857	316832458	325481352	333315427	341989734	349842948
Salvage Value Adjustment								
Assuming Salvage Value of 5%	14589373	15019756	15450893	15841623	16274068	16665771	17099487	17492147
Total tyre cost after adjusting salvage value	277198087	285375356	293566964	300990835	309207284	316649655	324890247	332350800

Repair and Maintenance **Annexure- B II**

Sl. No.	Description	Cost (in Rs.)
1	Cost of one tipper	3493409
2	Cost of Repair and Maintenance per Tipper per annum	**549156**

Repair and Maintenance

Particulars	Amount per tipper per month (Rs.)
Chasis	6288
Springs	7336
Clutch /Gear	14323
Filters and Spares	3493
Stores/ Welding	2096
Battery	4541
Body	7686
Total per Month	45763
Total per annum per tipper	549156

Lubricant

Surface to Surface **Annexure- CII**

no. of tippers 38

	Qty. per Tipper / Month (Lit./ Kg)	Rate (Rs.)	Total (Rs.)
Engine Oil	22.3	284.62	6346.94
Gear Oil	5	236.47	1182.36
Transmission Oil	7	210.98	1476.89
Stearing Oil	1	251.23	251.23
Hydraulic Oil	12	220.90	2650.75
Grease	12	283.20	3398.40
Coolant	6	287.23	1723.39
Distilled Water	10	15.00	150.00
Total Rs.			**17179.96**
Per annum per tipper			206160.00

(High Power Wage Committee Report: Notification No:CIL/C-5B/JBCCI/JC/VDA/277 dated: 22/10/2020)

Details of Wage element	Unskilled	Supervisory	Skilled	Highly Skilled
Minimum Wages	787	817	847	877
D.A.	119	124	128	133
Minimum basic	906	941	975	1010
PF 12 % & 7% pension benefit and bonus wherever applicable as per bonus act	172.14	178.79	185.25	191.9
Total Rs.	1078.14	1119.79	1160.25	1201.90

Lead	0.5	1.5	2.5	3.5	4.5	5.5	6.5	7.5
No. of tippers	36	51	64	77	89	101	112	123
No. of Drivers	108	153	192	231	267	303	336	369
No. of Drivers With reserve	136	193	242	291	336	382	423	465
Wages Per Day (Including Benefit)	1160	1160	1160	1160	1160	1160	1160	1160
Total Annual Wages of all Dirvers	49231728	69865614	87603516	105341418	121631328	138283236	153125154	168329070
Group insurance premium	202205	286952	359806	432659	499565	567958	628916	691362
Total Wages per annum	49433933	70152566	87963322	105774077	122130893	138851194	153754070	169020432

Lead	8.5	9.5	10.5	11.5	12.5	13.5	14.5	15.5
No. of tippers	134	144	154	165	175	185	194	204
No. of Drivers	402	432	462	495	525	555	582	612
No. of Drivers With reserve	507	544	582	624	662	699	733	771
Wages Per Day (Including Benefit)	1160	1160	1160	1160	1160	1160	1160	1160
Total Annual Wages of all Dirvers	183532986	196926912	210682836	225886752	239642676	253036602	265344534	279100458
Group insurance premium	753808	808819	865318	927763	984262	1039273	1089824	1146323
Total Wages per annum	184286794	197735731	211548154	226814515	240626938	254075875	266434358	280246781

Lead	16.5	17.5	18.5	19.5	20.5	21.5	22.5	23.5
No. of tippers	214	223	233	242	251	261	270	279
No. of Drivers	642	669	699	726	753	783	810	837
No. of Drivers With reserve	809	843	881	915	949	987	1021	1055
Wages Per Day (Including Benefit)	1160	1160	1160	1160	1160	1160	1160	1160
Total Annual Wages of all Dirvers	292856382	305164314	318920238	331228170	343536102	357292026	369599958	381907890
Group insurance premium	1202821	1253372	1309871	1360422	1410973	1467472	1518023	1568574
Total Wages per annum	294059203	306417686	320230109	332588592	344947075	358759498	371117981	383476464

Lead	24.5	25.5	26.5	27.5	28.5	29.5	30.5	31.5
No. of tippers	288	297	306	315	324	333	342	350
No. of Drivers	864	891	918	945	972	999	1026	1050
No. of Drivers With reserve	1089	1123	1157	1191	1225	1259	1293	1323
Wages Per Day (Including Benefit)	1160	1160	1160	1160	1160	1160	1160	1160
Total Annual Wages of all Dirvers	394215822	406523754	418831686	431139618	443447550	455755482	468063414	478923354
Group insurance premium	1619125	1669676	1720228	1770779	1821330	1871881	1922432	1967036
Total Wages per annum	395834947	408193430	420551914	432910397	445268880	457627363	469985846	480890390

Lead	32.5	33.5	34.5	35.5	36.5	37.5	38.5	39.5
No. of tippers	359	368	377	385	394	402	411	419
No. of Drivers	1077	1104	1131	1155	1182	1206	1233	1257
No. of Drivers With reserve	1357	1391	1425	1455	1489	1520	1554	1584
Wages Per Day (Including Benefit)	1160	1160	1160	1160	1160	1160	1160	1160
Total Annual Wages of all Dirvers	491231286	503539218	515847150	526707090	539015022	550236960	562544892	573404832
Group insurance premium	2017588	2068139	2118690	2163294	2213845	2259936	2310487	2355091
Total Wages per annum	493248874	505607357	517965840	528870384	541228867	552496896	564855379	575759923

Insurance, Road Tax, Permit & Fitness

Insurance

Cost of tipper (Rs.) 3493409
Life of Tipper (Years) 6

Year	Equipment value Rs.(IDV)	Own Damage premium	% No claim bonus	Liability (Third party, driver, PA etc)	Premium with GST	Premium without GST
1st Year	3493409	68820	0	17751	102154	86571
2nd Year	2794727	55056	20	17751	72919	61796
3rd Year	2235782	44045	25	17751	59926	50785
4th Year	1788626	35236	35	17751	47972	40654
5th Year	1430900	28189	50	17751	37578	31845
6th Year	1144720	22551	50	17751	34251	29026
Total					**354800**	**300678**

Avg. Premium	**59133**	**50113**
Registration	**1500**	**1500**
Hypothecation endorsement	**3000**	**3000**

Road Tax

Quarterly Tax (Rs.)		
Annual Rorad Tax (Rs.)	37800	37800

Permit

Charges (Rs.)		
Fitness	**3060**	**3060**
Charges (Rs.)	**500**	**500**
Total Charges Per Annum per tipper	**67193**	**58173**

Cost of Tippers 3493409 No. of Tippers 1

Interest on Term Loan

Particulars	1st year	2nd year	3rd year	4th year	5th year	6th year
Opening Balance @ 67% of Total Cost	2340584	1950487	1560389	1170292	780195	390097
Re-payment (Nine Equated Installments)	390097	390097	390097	390097	390097	390097
Closing Balance	1950487	1560389	1170292	780195	390097	0
Interest @ 10.5%	225281	184321	143361	102401	61440	20480

Average Interest Per Annum per tipper **122881**

Depreciation

Sl. No.	Description	Cost (Rs.)
1	Cost of One Tipper	3493409
2	Loan on Capitalised Cost @ 67%	2340584
3	Salvage Value	174670
4	Depreciative Value	3318739
5	Depreciation per year for one tipper	553123

Interest on working Capital

Lead (Km)		0.5	1.5	2.5	3.5	4.5	5.5	6.5	7.5
Current Assets	**Period**								
Diesel (Days)	7	1353233	3135938	4680975	6198624	7628301	9054918	10390305	11724053
Tyre(Month)	1	500304	1357295	2145501	2938374	3701443	4471790	5203834	5940342
Spares&mtce. Stores (month)	2	3294936	4667826	5857664	7047502	8145814	9244126	10250912	11257698
Lubricants (Month)	1	618480	876180	1099520	1322860	1529020	1735180	1924160	2113140
Total Current Asset (A)		5766952	10037240	13783659	17507361	21004577	24506014	27769211	31035233
Bank Loan 75 % A		4325214	7527930	10337745	13130521	15753433	18379510	20826908	23276425
Less Current Liabilities									
Diesel (Days)	3	579956.8	1343974	2006132	2656553	3269271.7	3880679	4452988	5024594
Tyre(days)	15	250152	678647.6	1072750	1469187	1850721.4	2235895	2601917	2970171
Spares&mtce. Stores (month)	1	1647468	2333913	2928832	3523751	4072907	4622063	5125456	5628849
Lubricants (Days)	15	309240	438090	549760	661430	764510	867590	962080	1056570
Total Current Liabilities (B)		2786817	4794624	6557474	8310922	9957410.1	11606227	13142441	14680184
Net Current Asset (A- B)		1538398	2733305	3780270	4819599	5796023	6773283	7684467	8596241
Interest @ 12%		184608	327997	453632	578352	695523	812794	922136	1031549

Lead (Km)		8.5	9.5	10.5	11.5	12.5	13.5	14.5	15.5
Current Assets	**Period**								
Diesel (Days)	7	13058182	14294512	15529747	16866999	18103624	19340872	20473483	21711808
Tyre(Month)	1	6681752	7376924	8074603	8828529	9532760	10239778	10893424	11605230
Spares&mtce. Stores (month)	2	12264484	13179744	14095004	15101790	16017050	16932310	17756044	18671304
Lubricants (Month)	1	2302120	2473920	2645720	2834700	3006500	3178300	3332920	3504720
Total Current Asset (A)		34306538	37325100	40345074	43632017	46659934	49691259	52455871	55493062
Bank Loan 75 % A		25729903	27993825	30258805	32724013	34994950	37268445	39341903	41619796
Less Current Liabilities									
Diesel (Days)	3	5596364	6126219	6655606	7228714	7758696	8288945	8774350	9305060
Tyre(days)	15	3340876	3688462	4037302	4414264	4766380	5119889	5446712	5802615
Spares&mtce. Stores (month)	1	6132242	6589872	7047502	7550895	8008525	8466155	8878022	9335652
Lubricants (Days)	15	1151060	1236960	1322860	1417350	1503250	1589150	1666460	1752360
Total Current Liabilities (B)		16220542	17641513	19063269	20611223	22036851	23464139	24765544	26195687
Net Current Asset (A- B)		9509362	10352311	11195536	12112790	12958099	13804306	14576359	15424109
Interest @ 12%		1141123	1242277	1343464	1453535	1554972	1656517	1749163	1850893

Lead (Km)		16.5	17.5	18.5	19.5	20.5	21.5	22.5	23.5
Current Assets	**Period**								
Diesel (Days)	7	22951405	24084337	25325947	26459657	27593602	28838380	29973610	31109293
Tyre(Month)	1	12319782	12978806	13698037	14360479	15024354	15750017	16417235	17085863
Spares&mtce. Stores (month)	2	19586564	20410298	21325558	22149292	22973026	23888286	24712020	25535754
Lubricants (Month)	1	3676520	3831140	4002940	4157560	4312180	4483980	4638600	4793220
Total Current Asset (A)		58534271	61304581	64352482	67126987	69903162	72960662	75741465	78524129
Bank Loan 75 % A		43900703	45978436	48264361	50345240	52427371	54720497	56806099	58893097
Less Current Liabilities									
Diesel (Days)	3	9836316	10321859	10853977	11339853	11825829	12359306	12845833	13332554
Tyre(days)	15	6159891	6489403	6849018	7180239	7512177	7875008	8208618	8542931
Spares&mtce. Stores (month)	1	9793282	10205149	10662779	11074646	11486513	11944143	12356010	12767877
Lubricants (Days)	15	1838260	1915570	2001470	2078780	2156090	2241990	2319300	2396610
Total Current Liabilities (B)		27627750	28931981	30367245	31673518	32980609	34420447	35729760	37039972
Net Current Asset (A- B)		16272954	17046455	17897117	18671722	19446762	20300050	21076338	21853125
Interest @ 12%		1952754	2045575	2147654	2240607	2333611	2436006	2529161	2622375

Lead (Km)		24.5	25.5	26.5	27.5	28.5	29.5	30.5	31.5
Current Assets	**Period**								
Diesel (Days)	7	32245481	33382214	34519522	35657429	36795950	37935098	39074880	40100727
Tyre(Month)	1	17755888	18427296	19100070	19774189	20449632	21126376	21804399	22419620
Spares&mtce. Stores (month)	2	26359488	27183222	28006956	28830690	29654424	30478158	31301892	32034100
Lubricants (Month)	1	4947840	5102460	5257080	5411700	5566320	5720940	5875560	6013000
Total Current Asset (A)		81308697	84095192	86883628	89674008	92466326	95260572	98056731	100567448
Bank Loan 75 % A		60981523	63071394	65162721	67255506	69349744	71445429	73542548	75425586
Less Current Liabilities									
Diesel (Days)	3	13819492	14306663	14794081	15281755	15769693	16257899	16746377	17186026
Tyre(days)	15	8877944	9213648	9550035	9887095	10224816	10563188	10902199	11209810
Spares&mtce. Stores (month)	1	13179744	13591611	14003478	14415345	14827212	15239079	15650946	16017050
Lubricants (Days)	15	2473920	2551230	2628540	2705850	2783160	2860470	2937780	3006500
Total Current Liabilities (B)		38351100	39663152	40976134	42290045	43604881	44920636	46237302	47419386
Net Current Asset (A- B)		22630423	23408242	24186587	24965461	25744864	26524793	27305246	28006200
Interest @ 12%		2715651	2808989	2902390	2995855	3089384	3182975	3276629	3360744

Lead (Km)		32.5	33.5	34.5	35.5	36.5	37.5	38.5	39.5
Current Assets	**Period**								
Diesel (Days)	7	41241484	42382894	43524955	44551944	45695036	46722548	47866684	48894766
Tyre(Month)	1	23099841	23781280	24463914	25082570	25767274	26387471	27074187	27695900
Spares&mtce. Stores (month)	2	32857834	33681568	34505302	35237510	36061244	36793452	37617186	38349394
Lubricants (Month)	1	6167620	6322240	6476860	6614300	6768920	6906360	7060980	7198420
Total Current Asset (A)		103366778	106167982	108971031	111486324	114292473	116809831	119619038	122138481
Bank Loan 75 % A		77525084	79625986	81728273	83614743	85719355	87607373	89714278	91603860
Less Current Liabilities									
Diesel (Days)	3	17674922	18164097	18653552	19093690	19583587	20023949	20514293	20954900
Tyre(days)	15	11549920	11890640	12231957	12541285	12883637	13193736	13537094	13847950
Spares&mtce. Stores (month)	1	16428917	16840784	17252651	17618755	18030622	18396726	18808593	19174697
Lubricants (Days)	15	3083810	3161120	3238430	3307150	3384460	3453180	3530490	3599210
Total Current Liabilities (B)		48737569	50056641	51376590	52560880	53882306	55067591	56390470	57576757
Net Current Asset (A- B)		28787515	29569345	30351683	31053863	31837049	32539783	33323808	34027103
Interest @ 12%		3454502	3548321	3642202	3726464	3820446	3904774	3998857	4083252

Annexure-III

Admin Expenses

Administrative manpower

Designation	Nos	Salary/ month (Rs.)	Total Salary per Month (Rs.)	Bonus wherever applicable
Manager	1	70000	70000	
Engineer	4	40000	160000	
Supervisor	17	27475	467070	
Mechanic	25	28496	712394	
Helper	34	26485	900478	
Tyre repair	2	27475	54949	
Denter	1	27475	27475	
Welder	3	27475	82424	
Light Vehicle driver	8	13861	110889	4664.8
Store keeper	2	13861	27722	1166.2
Fuel Supervisor	7	13861	97028	4081.7
Peon	2	10458	20915	1166.2
Cook	2	10458	20915	1166.2
Security Guard	3	10458	31373	1749.3
Electrician	3	28496	85487	
Total monthly wages	114		2869120	13994
Total wages per annum			**34429441**	**167933**
PF(12%) & Pension(7%)			6541594	
Group insurance premium			169495	
Gross annual wages including PF, pension, group insurance and bonus			**41308463**	

Office Expenditure

Expenditure Head	Monthly Expenditure (Rs.)
Office Rent	5000
Communication	5000
Electricity/ Water	7000
Fuel for LMV	45628
Stationeries	5000
Safety & Health	10000
Employee Welfare	10000
TA/ DA	12000
Office Maintenance	8000
Contingency Expenditure	5000
Other Miscellaneous	5000
Total office Expenditure per month	**117628**
Total office Expenditure per annum	**1411536**
Total administrative cost	**42719999**

Activity head	% of total direct manpower	Allocated Cost (Rs.)
Overall supervision	3.70%	1582222
Coal tipper	83.50%	35671919
Payloader	12.79%	5465859
Total	100.00%	42719999