'JUSTIFICATION FOR USE OF FOREST LAND FOR GARE PALMA IV/5 COAL MINE & ALTERNATIVES EXPLORED FOR THE PROJECT'

Conversion of Gare Palma IV/5 Coal Mine from Underground to Open Cast operation with an annual capacity of 1.1 MTPA

Introduction

Gare Palma IV/5 coal mine (GP IV/5), located in Tamnar Tehsil of Raigarh District of Chhattisgarh, was allocated vide e-auction conducted under Coal Mines Special Provisions Act 2015 to Hindalco Industries Limited vide Vesting Order dated 23rd March 2015. The mine has underground operation only with a peak rated capacity of 1.1 MTPA presently as per last approved Mining Plan, though the existing EC limits the production capacity to 1 MTPA only. The mine supplies coal to Captive Power Plants at Aditya & Hirakud in Sambalpur district of Odisha. The mine became operational in April 2016 after e-auction and have produced the peak rated capacity of 1 MTPA in FY 16-17.

Strategic Initiative

As a logical first step for scientific development of mineral deposit, Hindalco had carried out exhaustive systematic exploration and geological modelling to know the resources fully. The results of exploration have been encouraging wherein the total known reserves have increased by 60%. Additional coal seams were found which were not known at the time of acquisition. The reserves have been tabulated below-

Geological Reserve (MT)		
Unit	At The Time of Acquisition	Post Exploration
GP IV/5	89	143

After exploration & geological modelling, an exercise has been carried out in association with industry experts and international agencies so as to arrive at best method to exploit the mineral wealth. The study reveals that continuing with the underground method will not allow any additional coal to be mined despite the increase of geological reserves by about 60%. However, if the mine is converted to opencast, the mineable reserves will increase by 3.4 times i.e. from 27.6 MT to 93 MT, which is a quantum jump in reserves wherein we get the control of 3.4 times of mineable reserve from the same allotted area.

Mine	Geological Reserves	Mineable Reserves (Current Method) (As on March 21)			Mineable Reserves (Post conversion) (As on March 21)		
		OC	UG	Total	OC	UG	Total
GP IV/5	143	-	27.6	27.6	93	-	93

Present vs Proposed operation

Mining operation at GP IV/5 mine is by underground only with working in two seams. Underground workings have been done by conventional method of drilling and blasting, which leaves negligible scope for mechanisation. Development of Seam II is completed & going forward extraction of coal from Seam II is possible only through depillaring. The process of depillaring has also been started from 2017. The present approved mining plan allows us to go for depillaring by partial extraction method. Partial extraction method of pillar extraction is presently banned by DGMS, Government of India, who grants permission for methods of coal extraction. Moreover, even with this method the total percentage of coal extraction will be very less and it would not last for the entire mining lease period.

Depillaring with stowing, which includes filling of voids by sand after coal extraction, not only adds cost to production but also slows down the rate of extraction because of addition of one more cycle of activity i.e. filling of voids. Because of slow rate of extraction, it is not possible to adhere to the annual capacity on year on year basis, making the project unviable. Besides this the condition in FC does not allow us to go for complete depillaring underneath the forest area, thus blocking the underground coal reserves below the forest area in mining lease.

Taking all above factors into account the most suitable method going forward is conversion of underground workings into opencast which is techno-economically viable. This conversion will not only enhance the percentage of extraction but also will enable us to achieve the desired level of production on year on year basis. This will also ensure consistent flow of revenues to the state exchequer. Any upside potential of increasing the capacity will further increase the revenue contribution to the state.

A comparative table for flow of revenue to state exchequer is given below for current mining method & conversion to opencast.

Table: Revenue Flow to State Exchequer of GP IV/5

Financial Year	2016 -17	2017 -18	2018 -19	2019 -20	2020 -21	2021 -22	2022 -23	2023 -24	2024 -25
Current Method									
Production	1.00	0.68	0.54	0.65	0.55	0.55	0.55	0.55	0.55
Revenue to Exchequer	463	355	287	316	268	268	268	268	268
Conversion to Opencast									
Production							1.10	1.10	1.10
Revenue to Exchequer							523	523	523

Alternative Explored

The only alternative available is to continue with the present method. As explained above with the current method of operation the rate of production will decrease year on year with reducing revenue flow. Continuing with this method will make this mine unviable as the economics and the rate of production will not remain sustainable. As the mine acts as a lifeline by providing direct & indirect employment to the surrounding area, the hindrance in operation of the mine with the current method of working will have a negative socio-economic impact also. Hence, there is no alternative except to change the method of mining & convert to opencast method.

Conclusion

Looking at the above advantages of the proposed change in method of operation, it is proposed to covert the underground operations at Gare Palma IV/5 coal mine into opencast with an annual capacity of 1.1 MTPA, which will also ensure safe working condition and better operational management as there is no other suitable alternative for the sustainability of the mine. Diversion of 319.73 ha of forest land is required for the above conversion.

For Hindalco Industries Limited

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