

Final minutes of the 27th meeting of the EAC held on 27th February, 2018 for appraisal of Coal mining projects..

A. The 27th meeting of the Expert Appraisal Committee (EAC) for Thermal & Coal mining projects was held on 27 February, 2018 in the Ministry to consider the proposals relating to coal mining sector. The lists of participants and the project proponents are at Annexure-I & II respectively.

B. Confirmation of minutes

There being no comments from any of the members of the Committee, minutes of the 26th meeting of the EAC held on **15-16 February**, 2018 were confirmed.

C. Details of the proposals considered during the meeting, deliberations made and the recommendations of the Committee, are explained in the respective agenda items as under:-

Agenda No. 27.1

Expansion of Kulda OCP from 10.0 MTPA to 15.0 MTPA of M/s Mahanadi Coalfields Limited in an ML area of 634.205 ha located in Tehsil Himgir, District Sundergarh (Odisha) - For EC

[IA/OR/CMIN/61822/2017, F.No. J-11015/3/2017-IA-II(M)]

27.1.1 The proposal is for grant of EC to the project for expansion of Kulda Expansion OCP from 10.0 MTPA to 15.0 MTPA of M/s Mahanadi Coalfields Limited in an ML area of 634.205 ha located in Tehsil: Himgir, District: Sundergarh (Odisha).

27.1.2 The details of the project, as per the documents submitted by the project proponent, and also as informed during the meeting, are reported to be as under:-

(i) The project was accorded EC vide letter no. J-11015/10/95-IA.II(M) dated 24-12-2002 for 10.0 MTPA in an ML area of 878.29 ha [(929.60 – 51.31 = 878.29 ha) i.e. EC is only granted for 878.29 as out of 279.20 ha total Forest Land, FC is available only for 227.89 ha (FC is not available for 279.20 – 227.89 = 51.31 ha)].

(ii) ToR for the project was granted vide letter no. J-11015/10/1995-IA-II(M) part dated 18th May,2017.

(iii) The latitudes and longitudes of the project are 21°42'00" to 21° 44'30" N and 83°43'00" to 83°46'30" E respectively.

(iv) Joint Venture: There is no joint venture.

(v) Coal Linkage: Thermal Power Plant & Basket Linkage

(vi) Employment generated / to be generated: 385 numbers (direct employment)

(vii) Benefits of the project: (a) Improvement in physical infrastructure, (b) Improvement in social infrastructure, (c) Increase in employment potential, (d) Contribution to the exchequer (both State and Central Govt.), (e) Post-mining enhancement of green cover, (f) Improvement of electrical power generation and availability of electricity for 24x7 in rural areas, (j) overall economic growth of the country.

(viii) There is no additional land involved in the Project. The total land area is 694.605 ha. Mining lease area as per the approved Mining Plan is 634.205 ha.

(ix) The land usage of the project will be as follows:

Pre-Mining:

Sl.	Type of Land	Within ML area (ha)		Outside ML area (ha)		Total Area (ha)	
		Existing	Proposed	Existing	Proposed	Existing	Proposed
1.	Agricultural/Tenancy	455.790	259.794	37.500	37.500	493.290	297.294
2.	Waste land	194.610	146.521	22.900	22.900	217.510	169.421
3.	Forest Land	279.200*	227.890	0.000	0.000	279.200	227.890
4.	Grazing	0.000	0.000	0.000	0.000	0.000	0.000
5.	Surface water bodies	0.000	0.000	0.000	0.000	0.000	0.000
Total:		929.600	634.205	60.400	60.400	990.000	694.605

Note: Instead of 929.60 ha, EC is only granted for 878.29 ha; as out of *279.20 ha Forest Land, FC is available only for 227.89 ha (FC not available for 279.20 – 227.89 = 51.31 ha).

Post- Mining:

Sl.	Land Use during Mining (Core Zone)	Land-Use (ha)					
		Plantation/ grass carpeting	Water Body	Dip side slope & haul road	Un- disturbed	Built-up area	Total
1.	Excavation Area	211.470	17.64	92.80	--	--	321.910
2.	OB dump Area	160.502	--	--	--	--	160.502
3.	Infrastructure	25.230	--	--	--	100.927	126.157
4.	Embankment	3.510	--	--	--	14.049	17.559
5.	Other Area including Safety Zone & Road/ Nullah Diversion	8.077	--	--	--	--	8.077
Total		408.789	17.64	92.80	--	114.976	634.205

Core Area:

Particulars	Existing (ha)			Proposed (ha)		
	Forest	Non- Forest	Total	Forest	Non- Forest	Total
Excavation Area	241.700	294.300	536.000	187.155	134.755	321.910
Infrastructure/Embankment and Other Area including Safety Zone	32.900	189.930	222.830	36.615	115.178	151.793
External OB Dumps	4.600	166.170	170.770	4.120	156.382	160.502
Mine Lease Area	279.200*	650.400	929.600	227.890	406.315	634.205
Residential Colony	0.000	37.500	37.500	0.000	37.500	37.500
Rehabilitation Site	0.000	22.900	22.900	0.000	22.900	22.900
Outside Lease Area	0.000	60.400	60.400	0.000	60.400	60.400
Total	279.200	710.800	990.000	227.890	466.715	694.605

Note: Instead of 929.60 ha, EC is only granted for 878.29 ha; as out of *279.20 ha Forest Land, FC is available only for 227.89 ha (FC not available for 279.20 – 227.89 = 51.31 ha).

- (x) The total geological reserve is 438.90 MT. The mineable reserve 245.71 MT, extractable reserve is 122.29 MT. The percent of extraction would be 70.20%.
- (xi) The coal grade is G-11 (average). The stripping ratio is 0.90 Cum/tonne. The gradient varies from 5° to 8°. There are three major seams with thickness ranging upto 34.07 m.
- (xii) The total estimated water requirement is 4083 m³/day. The level of ground water ranges from 0.30 m to 8.42 m below ground level.
- (xiii) The method of mining would be Opencast.
- (xiv) There are two external OB dumps with quantity of 30.26 Mm³ in an area of 160.502 ha with the height of 90 meter above the surface level and two internal dump with quantity of 112.32 Mm³ in an area of 211.47 ha.
- (xv) The final mine void would be in 34.05 ha with depth varying from 30 m to 40 m and the total quarry area is 469.80 ha. Backfilled quarry area of 435.75 ha shall be reclaimed with plantation. A void of 17.64 ha with depth upto 200 m (max.) which is proposed to be converted into a water body.
- (xvi) The seasonal data for ambient air quality has been documented and all results at all stations are within the prescribed limits.
- (xvii) The life of mine is 9 Years.
- (xviii) Transportation: In pit: by trucks. Surface to Siding: Present:- Kanika siding (31 km) by truck, JSPL Raigarh by truck & Road Sale by tarpaulin-covered truck. Proposed:- Sardega Siding (6.0 Km) by truck, JSPL Raigarh by Pipe Conveyor & Road Sale by tarpaulin-covered truck. Siding to Loading: by pay loader into wagons.
- (xix) There is no additional R&R involved.
- (xx) Cost: Total capital cost of the project is Rs.622.21 Crores. CSR Cost is 2% of the average net profit of the company for the three immediate preceding financial years. Environmental Management Cost Rs.87.28 Crores.
- (xxi) Water body: Chattajor nallah passing through the mine lease area, Basundhara river flows at a distance of 70 m, Bhaina Jor is at a distance of 0.5 km.
- (xxii) Approvals: Board's approval obtained in the 182nd Board Meeting held on 22-10-2016. Mining plan has been approved by MoC vide letter no. 34012/(04)/2011-CPAM dated 26-12-2016. Mine closure plan is an integral part of mining plan.
- (xxiii) Wildlife issues: There are no National Parks, Wildlife Sanctuary, Biosphere Reserves found in the 10 km buffer zone.
- (xxiv) Forestry issues: Total forest land is 227.89 ha in ML area of 634.205 ha, Forest clearance has been obtained vide letter no. F.No.8-176/1997-FC dated 8th August, 2007.
- (xxv) Total afforestation plan shall be implemented covering an area of 211.47 ha at the end of mining and green belt over an area of 8.077 ha has also been proposed having density of tree plantation 2500 trees/ha..
- (xxvi) There are no court cases/violation pending with the project proponent for the proposed expansion.
- (xxvii) The public hearing was held on 10th January, 2018 for expanded capacity of 15 MTPA. The issues raised during the public hearing included control of air pollution, water pollution, supply of drinking water, employment, etc.
- (xxviii) Base line data was generated during the pre-monsoon season, March to June, 2017.
- (xxix) The Cumulative Impact Assessment Study has been done considering nearby running and upcoming mines namely, Kulda Expansion OCP, Garjanbahal OCP, Basundhara OCP and Basundhara (W) Extn. OCP for incremental capacity of 23.25 MTPA, and it has been observed that

after replacement of road transportation by rail and conveyors, the absolute predicted values of PM10 will lie within the permissible limit at all the locations.

(xxx) The calander programme of coal production proposed:

YEAR	COAL (Mt)
Year-1	10.00 + 5.00
Year-2	15.00
Year-3	15.00
Year-4	15.00
Year-5	15.00
Year-6	15.00
Year-7	15.00
Year-8	15.00
Year-9	7.29 - 5.00
TOTAL	122.29

(xxxi) The project was inspected by the officials of the Eastern Regional Office, MoEF&CC, Bhubaneswar on 08-06-17 & the certified compliance report was issued vide letter no. 101-141/2003/E.P.E dated 25-09-2017. The ATR on the ERO's observation was submitted to ERO vide letter no. MCL/PO/KOCP/2017-18/511 dated 24-10-2017 & 01-02-2018.

(xxxii) The present status of compliance on the observations of ERO is given below:

EC Condition No.	Information / action plan sought by ERO	Compliance
A(ii)	It is requested to submit the detailed information regarding quantum of OB dumped in Garjanbahal OCP from the commencement of mining operation to till date and quantum of OB stored presently.	As per the approved mining plan of Garjanbahal OCP: "Since there is acute shortage of dumping space near the mine, it is proposed to make this dumping area as common for both Kulda & Garjanbahal OCP. This dump site is within the notified area of MCL". However, a temporary coal stock was created near the mine boundary of Kulda & Garjanbahal OCP (within notified area of MCL) which has been liquidated completely. To control heating of coal stock it was blanketed by using OB material (about 86,840 Cum). So, it is requested the above OB material used for blanketing of coal should not be considered as OB dump.
-	It is required to provide proper boundary pillar between the Kulda OCP & Garjanbahal OCP	Boundary pillars have been provided between Kulda OCP & Garjanbahal OCP.
A(iii)	It is required to desilt the catch drains, siltation ponds and garland drains regularly and maintained	The drains & siltation ponds have been cleaned. As per monsoon preparation plan of the mine, the drains are cleared and de-silted before every monsoon.

	properly	
A(iv)	It is required to construct the retaining wall at the toe of the dumps and OB benches within the mine and the dimension of the wall should be based on the rainfall data.	<ul style="list-style-type: none"> The dump within the mine (internal dumping) on one side high wall is available and the other side is moving with the advance of the mine, thus the dumps are active. Surface run-off is collected in the mine sump.
A(vi)	It is required to develop the green belt of adequate width by planting the native species around the mine lease area, coal handling plant, roads, OB dump sites, etc. the density of tree should be around 2500 plants per ha.	<ul style="list-style-type: none"> 1,35,558 nos. (53.60 ha) number of trees have been planted in the safety zone. 300 trees have been planted and 210 plants have been distributed during 2017-18. Required plants are being propagated and grown in Kulda Nursery located within the mining lease. A total of 1,49,701 plants (61.97 ha). Expenditure made till now is Rs.47.25 lakhs.
A(vii)	It is requested to submit the ground water quality monitoring reports of the dug well along with the ground water level reports.	<ul style="list-style-type: none"> Ground water quality was monitored at two dug wells and five no. of piezometers. Monitoring report is submitted along with the half-yearly report.
A(viii)	It is required to reinstall all the water sprinklers and nozzles installed at CHP for effective control of fugitive emission.	<ul style="list-style-type: none"> It has been provided with 12 nos. of mist sprayers and 40 fog nozzles, additionally 6 nos. of fixed sprinklers in CHP ramp & 6 nos. in CHP site have been installed. Instant water showering system is also provided at the exit of the CHP facility. Only 4-8% of the total coal produced is crushed in the CHP.
A(viii)	It is required to install the dust control arrangements at loading and unloading of coal at coal stockyard.	<ul style="list-style-type: none"> A network of pipe line has been provided in the all the coal stocks and are used as and when required.
A(xiii)	It is required to submit the report regarding monitoring of land use pattern by digital processing of the entire lease area using remote sensing technique. It requires immediate action.	<ul style="list-style-type: none"> Land use plan by remote sensing technique is generated at every three year interval & the last report was submitted vide letter dated 05/09-05-2015. All the reports since 2008 are uploaded in the Company website www.mahanadicoal.in

A(xv)	It is required to construct appropriate ETP by an expert for efficient treatment of influent coming from all source points.	<p>The ETP is zero discharge with the treated water being reused after collection in the mine sump. Expert opinion from CMPDIL was sought & the suggestions will be implemented.</p> <p>Meanwhile cleaning of the ETP has been completed.</p> <p>Latest Quality of treated water:</p> <table border="1"> <thead> <tr> <th>#</th> <th>Date of Sampling</th> <th>pH</th> <th>TSS (mg/l)</th> <th>Oil & Grease (mg/l)</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>06-11-2017</td> <td>7.34</td> <td>58.0</td> <td>< 4.0</td> </tr> <tr> <td>2</td> <td>02-12-2017</td> <td>7.77</td> <td>14.0</td> <td>< 4.0</td> </tr> </tbody> </table>	#	Date of Sampling	pH	TSS (mg/l)	Oil & Grease (mg/l)	1	06-11-2017	7.34	58.0	< 4.0	2	02-12-2017	7.77	14.0	< 4.0
#	Date of Sampling	pH	TSS (mg/l)	Oil & Grease (mg/l)													
1	06-11-2017	7.34	58.0	< 4.0													
2	02-12-2017	7.77	14.0	< 4.0													
B(v)	It is required to provide the earmuffs to all the workers engaged in noisy atmosphere like blasting, drilling and HEMM operations.	<p>No blasting required in coal & controlled blasting using delay detonator is done in OB.</p> <p>Sound proof & AC cabins are being provided and maintained in HEMMs.</p> <p>Ears plugs/muffs are being provided to the workers engaged in blasting, drills and HEMM operation at regular interval.</p> <ul style="list-style-type: none"> 46 numbers of ear muffs have been issued during 2017-18. Routine noise monitoring is being done, noise levels are within the prescribed limits & report is being submitted with the half yearly report. 															
B(iv) & B(iii)	<p>It is required to take adequate measures to control the fugitive dust emissions at all the emitting points.</p> <p>The particulate matter viz. SPM, PM10 and PM2.5 were exceeded the prescribed limits. 24 h and annual average values of PM2.5 were also exceeded the prescribed limits of 60 and 40 μm^3 respectively.</p> <p>It is required to take immediate action to control the particulate matter in the ambient air.</p>	<p>Following additional measures have been taken for control of dust pollution</p> <ul style="list-style-type: none"> Additional 2 nos. of 28 KL water sprinklers with mist spraying arrangement deployed. Additional 16 nos. of fixed sprinklers installed on coal transportation road & CHP area. Total 67 fixed sprinklers have been installed in CT road. A mechanical sweeper has been deployed on CT road. Berms on the CT road have been cleaned. Tarpaulin covering on trucks are being monitored by installing CCTV. <p>The routine air quality monitoring being done at fortnightly interval. The latest monitoring results for the month of Nov & Dec 2017</p>															
	Date of sampling	Monitoring stn.	PM _{2.5}	PM ₁₀	SPM	SO ₂	NO _x										
	03-11-17	South of working face/ karlikachar village	43	75	224	1.52	8.04										
	03-11-17	South of external OB dump/Farakbahal village	17	154	502	1.91	6.54										

	04-11-17	West of working face/ near Tumulia	33	44	59	0.97	8.48
	16-11-17	South of working face/ karlikachar village	58	91	152	3.61	23.47
	16-11-17	North of CHP/ Khushra village	-	93	98	2.86	19.38
	16-11-17	South of external OB dump/Farakbahal	16	23	34	0.80	7.90
	17-11-17	West of working face/ near Tumulia	53	249	414	7.63	10.13
	17-11-17	External CT Road	50	62	93	4.24	12.63
	01-12-17	North of CHP/ Khushra village	72	144	196	2.6	15.99
	01-12-17	South of working face/ karlikachar village	64	166	214	0.76	0.70
	04-12-17	South of external OB dump/ Farakbahal	26	219	306	3.09	14.83
	04-12-17	West of working face/ near Tumulia	172	345	895	3.34	2.84
	18-12-17	South of working face/ karlikachar village	39	165	625	0.74	8.36
	18-12-17	South of external OB dump/ Farakbahal	23	97	167	11.32	1.13
	18-12-17	North of CHP/ Khushra village	73	89	150	1.14	2.94
	19-12-17	West of working face/ near Tumulia	35	119	201	1.06	1.22
	19-12-17	External CT Road	92	149	226	1.89	7.26
	The monitoring locations were revised w.e.f. April, 2017						
B(iii)	It is required to monitor the CO levels in ambient air quality.		Being monitored, report submitted to ERO, MoEF&CC, Bhubaneswar vide letter dtd: 24-10-2017 & will be submitted regularly along with Half-yearly Compliance Report.				
B(viii)	It is required to take immediate initiative to make sure the personnel working in dusty areas should wear protective respiratory devices.		350 dust mask have been issued during 2017-18 & steps have been taken to sensitise the personnel working in dusty areas for regular use of PPE.				
B(viii)	It is required to conduct occupational health surveillance check-up of the workers and should be undertaken periodically as per the guidelines to observe any contractions due to exposure to coal dust and the corrective measures, if		Occupation health surveillance is conducted as per the provisions of Coal Mines Rules 1955. Periodical medical examination (PME) of all employees are being carried out at every 5 year interval & Initial Medical Examination of all new appointees:				
			Period	IME	PME		
			2015-16	138	33		
			2016-17	253	58		

	needed. The detailed report n occupational health surveillance check-up of the workers should submitted regularly.	2017-18 (till 01-01-18)	393	58
B(xi)	It is required to submit the item wise details regarding the expenditure incurred under the environmental protection measures regularly.	The item-wise expenditure details submitted to ERO vide letter no. 511 dtd: 24-01-2017 & letter no. 675 dtd: 01-02-2018.		
-	It is required to submit the details regarding date of financial closures and final approval of the project by the concerned authorities and the date of start of land development work.	<ul style="list-style-type: none"> The project is still ongoing and financial closure has not yet been done. Final approval of the project has been done on 26-08-2002. Date of start of land development work – 07-12-2007. 		
B(xvi)	It is required to submit the copies of the newspaper advertisement.	<p>The advertisement has been made in ENGLISH in 'THE HINDUSTAN TIMES' - Kolkata Edition dated 08-05-2003 & in ODIYA in 'THE SAMBAD' – Western edition from Sambalpur & Rourkela dated 07-05-2003.</p> <p>The copies of advertisement made has been communicated to ERO, Bhubaneshwar vide letter no. MCL/PO/KOCP/2017-18/675 dated 01-02-2018.</p>		

(xxxiii) The Public Consultation (PC) scheduled on 14-11-2017 could not be conducted & was postponed by ADM, apprehending law & order situation. The PC was reschedule & held on 10-01-2018. Total 300 people attended the meeting out of which 150 belongs to the lease area. The views/issues raised by public & comments/ reply of the PP is given below:

Sl.	Issues raised by the public	Action taken / to be taken by MCL
01.	Pollution due to coal dust (Air Pollution)	<ol style="list-style-type: none"> For dust suppression on roads – 2x28 Kl, 4x12 Kl mobile water tankers are deployed. Proposal for purchase of one more 28KL water tanker is under process. 52 nos. of Fixed sprinklers have been set up on the concreted Coal Transportation road and 70 nos. more are planned to be set up in the year 2018-19 to arrest dust pollution from CT roads. 02 nos. Instant water shower system has been set up at the exit of the mine. Apart from this Tyre Wash System is also being set up at the exit of the mine for prevention of coal dust being transferred to public roads. 12 nos. of Fixed sprinklers are functioning in Kanika Railway Siding. Sardega – Barpali Railway Siding has been

		<p>completed and is to be commissioned in the month of Feb 2018. Out of 15 MT of coal, 10 MT of coal will be dispatched through this siding and remaining 4 MT will be dispatched to JSPL by Pipe Conveyor and only 1 MT of coal will be dispatched through Road Sale in covered tippers.</p> <ol style="list-style-type: none"> 7. Sardega Siding will reduce the coal transportation distance from 31 km to 6 km, there by reducing the no. of vehicles plying. 8. Conveyor with Silo loading arrangement has been proposed. 9. After technical reclamation of the backfilled area of Kulda OCP, adequate plantation will be done.
02.	Water Pollution	<ol style="list-style-type: none"> 1. Zero discharge is being maintained by the mine. 2. Workshop effluent is treated in ETP for removal of TSS & O&G. The treated water is collected in the mine sump & reused for industrial purposes.
03.	Drinking water supply	<ul style="list-style-type: none"> • Drinking water supply is being done for 09 peripheral villages during the summer. • Expenditure for Drinking Water Supply in 2016-17: Rs.12.22 lakhs • Apart from that work of drinking water supply to Barpali, Kushara, etc .,is being taken up with district administration on deposit basis under CSR. • As per requirement MCL is supplying drinking water to all the nearby villages in consultation with district administration.
04.	Employment for unemployed youth	<ul style="list-style-type: none"> • MCL is providing employment to all the land doners as per R&R policy under recommendations of the Honorable Claim Commission setup by the Supreme Court of India. • So far MCL Basundhara has already provided employment to 313 nos. of persons against Kulda OCP and will be providing the balance employment to 33nos. as per recommendations of the Claim Commission. • Total Employment Provided till date in Basundhara Area : 1542 • Indirect Employment Provided till date: 487 (Security Guards). • Co-operative societies formed by PAPs are given transportation contracts. 01 no. of work is currently being executed by PAP. • The R&R policy of MCL is in accordance with the R&R policy of Govt of Odisha 2006, which is one of the best R&R policy of India.

		<ul style="list-style-type: none"> • Skill development work : till date more than 150 persons have been trained in stitching & tailoring work
05.	Plantation to be promoted	<ul style="list-style-type: none"> • 1,35,558 nos. (53.60 Ha) of trees have been planted in the safety zone. • A total of 1,49,701 plants (61.97 ha) have been planted since inception of mine. • Expenditure made till now is Rs.47.25 lakhs. • Backfilling is in progress & Plantation in backfilled area will be taken up phase-wise from 2019-20 onwards.

(xxxiv) Kulda OC is catering to most of the critical and super critical thermal power plants and at the present level of production it has already achieved its production capacity of 10 MTPA and is under non-producing state for the want of EC for higher production capacity. In view of the shortage of coal in the country and rising demand of the power, it is requested to accord the EC on priority basis in National interest.

27.1.3 During deliberations on the proposal, the Committee noted the following:-

The proposal is for environmental clearance to the project for expansion of Kulda Opencast Coal Mine from 10 MTPA to 15 MTPA by M/s Mahanadi Coalfields Limited in a total area of 694.605 ha (includes 634.205 ha ML area), located in Tehsil Himgir, District Sundergarh (Odisha).

Total project area of 694.605 ha includes forest area of 227.89 ha for which Stage-II FC has been granted vide letter dated 8th August, 2007.

Earlier, the Environmental Clearance to Kulda Opencast Coal Mine for capacity of 10.0 MTPA in mine lease area of 878.29 ha, was accorded by the Ministry vide letter dated 24th December, 2002. Reduction in total project area from 878.29 ha to 694.605 ha is due to sparing of part forest land pertaining to Lalma Reserve Forest.

ToR for the project for expansion from 10 MTPA to 15 MTPA in a total area of 694.605 ha was issued on 18th May, 2017 and the public hearing was conducted on 10th January, 2018. Main issues raised during the public hearing included control of air pollution, water pollution, supply of drinking water, employment, etc.

Mining plan has been approved by MoC vide letter No 34012/(04)/2011-CPAM dated 26th December, 2016. Mine closure plan is an integral part of the mining plan.

The observations of the Regional Office during their site visit on 8th June, 2017, mainly included the following:-

(a) As per the ambient air quality monitoring at 5 locations during October, 2016 to March, 2017, PM₁₀ & PM_{2.5} values were found in the range of 257-595 ug/m³ & 68-185 ug/m³ i.e. much higher than the prescribed standards of 100 ug/m³ & 60 ug/m³ respectively, which are bound to increase substantially with the proposed expansion of the mining operations,

(b) Overburden was being dumped in the mine lease area of the adjoining Garjanbahal OCP since commencement of mining operations till date, which is actually the non-compliance of the EC conditions and attracts action under the provisions of the EP Act, 1986. There was even no proper demarcation between the Kulda OCP and the Garjanbahal OCP.

(c) OB dumping in the command area of Ganjanbahal OCP also amounts to violation of the EIA Notification, 2006 for the reported mining operations therein without obtaining the prior EC.

(d) The greenbelt of adequate width is yet to be developed around the mine lease area, coal handling plant, OB dump sites, etc.

(e) Coal handling plant not being used regularly and the water sprinklers installed there, not working properly.

The EAC expressed its deep concern over the prevailing environmental settings and the status of statutory compliances.

The Committee also took cognizance of the public representation forwarded by the Regional Office vide letter dated 30th January, 2018, alleging non compliances and the public hearing not conducted properly. The Committee desired that the Ministry may take appropriate action separately under the statutory provisions.

Kulda OC is catering to most of the critical and super critical thermal power plants. The project has already achieved its production capacity of 10 MTPA and presently reported to be non-operational. In view of the shortage of coal in the country and the resulting power crisis, there is a pressing demand for grant of Environmental Clearance to the expansion project in National interest.

In view of reported shortage of coal, present environmental concerns, pollution load and the proposed mitigating measures, transportation facilities, infrastructure available etc, it was suggested to recommend the project for expansion up to 14 MTPA for a period of one year only.

Further, due to higher pollution load, the EAC opined to review compliance of the actions taken on observations of the Regional Office before December 2018, so as to make further recommendations for continuance of the EC in respect of the project thereafter.

27.1.4 *The EAC, after deliberations recommended the project for grant of EC to the expansion of Kulda Opencast Coal Mine from 10 MTPA to 14 MTPA of M/s Mahanadi Coalfields Ltd in a total area of 694.605 ha (ML area 634.205 ha) located in Tehsil Himgir, District Sundergarh (Odisha), for a period of one year only i.e. up to 31st March, 2019, and subject to the compliance of terms and conditions as applicable, and the additional conditions as under:-*

(i) *The project proponent shall collect and analyze one season base line data for environmental parameters, preferably during April-June, 2018, and submit for consideration of the EAC before 31st December, 2018.*

(ii) *The project proponent shall also submit the details regarding action taken on different observations of the Regional Office before 31st December, 2018, for the Committee to examine adequacy and efficacy of the pollution control measures and its impact on ambient air quality and to make recommendations for continuance of the project thereafter.*

- (iii) To control the production of dust at source, the crusher and in-pit belt conveyors shall be provided with mist type sprinklers.
- (iv) Mitigative measures shall be undertaken to control dust and other fugitive emissions all along the roads by providing sufficient numbers of water sprinklers. Adequate corrective measures shall be undertaken to control dust emissions as presented before the Committee, which would include mechanized sweeping, water sprinkling/mist spraying on haul roads and loading sites, long range misting/fogging arrangement, wind barrier wall and vertical greenery system, green belt, dust suppression arrangement at railway siding, etc.
- (v) Persons of nearby villages shall be given training on livelihood and skill development to make them employable.
- (vi) To ensure health and welfare of nearby villages, regular medical camps shall be organized at least once in six months.
- (vii) Thick green belt of 75 m width at the final boundary in the down wind direction of the project site shall be developed to mitigate/check the dust pollution.
- (viii) A third party assessment of EC compliance shall be undertaken once in 03 year through agency like ICFRI /NEERI/IIT or any other expert agency identified by the Ministry.
- (ix) The coal company/project proponent shall be liable to pay the compensation against the illegal mining, if any, and as raised by the respective State Governments at any point of time, in terms of the orders dated 2nd August, 2017 of Hon'ble Supreme Court in WP (Civil) No.114/2014 in the matter of 'Common Cause Vs Union of India & others'.
- (x) The project proponent, without prejudice to this environmental clearance, shall be bound to comply with any other interpretation of the orders of Hon'ble Supreme Court also, in due course of time.

Agenda No. 27.2

Standardization of Environmental Clearance Conditions for Opencast Coal, Underground mines and Coal Washery projects

The draft condition on Standardization of Environmental Clearance Conditions for Opencast Coal, Underground mines and Coal Washery projects will be finalized in the next EAC meeting.

Agenda No. 27.3

Discussion on any other item

With the approval of the Competent Authority and permission of the Chair, the following agenda item was taken up for the consideration.

Kusmunda Opencast Expansion Coal mine Project from 26 to 50 MTPA (Normative) & 62.50 MTPA (Peak) of M/s South Eastern Coalfields Limited in an area of 1655.825 ha located District Korba (Chhattisgarh) - For EC

[IA/CG/CMIN/23512/2014, F.No. J-11015/176/2014-IA-II(M)]

27.3.1 The proposal is for environmental clearance for expansion of the project, Kusmunda Opencast coal mine from 26 MTPA to 50 MTPA (Normative)/62.50 MTPA (Peak) in an area of

1655.825 ha of M/s South Eastern Coalfields Limited in District Korba (Chhattisgarh).

27.3.2 The details of the project, as per the documents submitted by the project proponent, and also as informed during the meeting, are reported as under:-

- (i) Originally the proposal was for grant of Environmental Clearance to the project for expansion of Kusmunda opencast coal mine from 15 MTPA (Normative)/18.75 MTPA (Peak) to 50 MTPA(Normative)/62.50 MTPA (Peak) in ML area 3510.348 ha (Latitude and longitude of the project site are 22^o 15' 18" to 22^o 21' 30" N and 82^o 38' 39" to 82^o 42' 08" E) of M/s South Eastern Coalfields Limited at district Korba (Chhattisgarh). The public hearing held on 11th February, 2015.
- (ii) The proposal was considered by the Expert Appraisal Committee (EAC) in the Ministry for thermal and coal mining projects in its 37th meeting held on 11th -12th June 2015, 39th meeting held on 16th-17th July 2015, 42nd meeting held on 31st Aug- 1st September 2015, 44th meeting held on 8th -9th October 2015, 47th meeting held on 30th November – 1st December 2015 and 49th meeting held on 7th -8th January, 2016.
- (iii) The EAC after detailed deliberation on the proposal in its 49th meeting held on 7th- 8th January, 2016 recommended the project for grant of environmental clearance for a production level of 26 MTPA (peak).
- (iv) Environmental Clearance for Kusmunda Opencast coal mine had been granted by the Ministry vide letter no. J-11015/176/2014-IA.II (M) dated 3rd February, 2016 for expansion from 18.75 MTPA to 26 MTPA in leasehold area of 1449.864 ha.
- (v) Further to meet the country's demand of coal, the project proponent applied on 21st December 2017 for expansion from 26 MTPA to 50 MTPA (Normative) and 62.50 MTPA (Peak) after taking various control measures as per EC conditions.
- (vi) To verify the status of compliance of EC conditions for Kusmunda opencast expansion project 26 MTPA, the Regional Office of MoEF&CC, Nagpur has carried out the site inspection on 22th April 2017. The compliance and monitoring reports has been forwarded to this Ministry vide their letter F No. EC-310/RON/2017-NGP/1921dated 13th June, 2017.
- (vii) Application for Diversion/Regularization proposal of 402.966 Ha (which includes 205.961 Ha of Revenue Forest Land of Kusmunda OCP (0-10 MTY) + 197.005 ha of Revenue Forest Land of Laxman OCP) has been submitted vide Proposal No. FP/CG/MIN/22244/2005 for Stage-I Forestry Clearance at MOEF&CC, New Delhi and is under process.
- (viii) The project was accorded TOR vide letter No. J/11015/176/2014-IA.II (M) dated 01.12.2014.
- (ix) The sub-committee of EAC made visit to three mines (Kusmunda, Gevra and Dipka OC) and the surrounding areas on 9th -10th October, 2014 before according TOR.
- (x) Mining plan for 50 MTPA was approved by CIL Board in its 300th meeting held on 28.10.2013. Mine closure plan is an integral part of the approved mining plan.
- (xi) The latitude and longitude of the project site are 22^o 15' 18" to 22^o 21' 30" N and 82^o 38' 39" to 82^o 42' 08" E respectively.
- (xii) The proposal for EC is in two phases:
Phase I: Proposal without fresh forest land in a total area of 1655.825 ha.
Phase II: Proposal with fresh forest land in a total area of 3510.348 ha (including Phase I).
- (xiii) Joint Venture: No
- (xiv) Coal Linkage : Various thermal power plants including Chhattisgarh State Electricity Board (CSEB).
- (xv) Employment generated / to be generated: already employed: 2017 persons and to be employed :4130 Persons.

(xvi) Benefits of the project: Project will considerably improve the socio-economic status of the adjoining areas. This will result in benefits such as improvements in physical infrastructure; improvements in social infrastructure, increase in employment potential, contribution to the exchequer, meet energy requirement and post-mining enhancement of green cover.

(xvii) The land use pattern of the project will be as follows:

i. Pre-Mining: (in ha)

Phase - I	
Agricultural/ Tenancy Land	1045.597 ha
Revenue Forest Land	205.961 ha
Govt/ Other Land	
A) Water Body	31.042 ha
B) Grazing Land	373.225 ha
C) Waste Land/ Others	00.00 ha
Sub Total of Govt. Land	404.267 ha
Total Land	1655.825 ha
Phase - II	
Agricultural/ Tenancy Land	2532.365 ha
Revenue Forest Land	376.922 ha
Govt/ Other Land	
D) Water Body	87.035 ha
E) Grazing Land	488.643 ha
F) Waste Land/ Others	25.383 ha
Sub Total of Govt. Land	601.061 ha
Total Land	3510.348 ha

ii. POST MINING LAND USE:

Sl.No.	Activities	Total Area(ha)
1	Void/ Water body	355.000
2	Reclaimed internal OB dump	1245.000
3	Safety zone	166.000
4	Rehabilitation	130.000
5	Colony	40.250
6	External dump	325.000
7	Infrastructures	300.000
8	Service road	10.000
9	Others	939.098
	Total	3510.348

iii.

CORE AREA:

Phase – I: Project Land Use Details During Mining (Proposal without Fresh Forest Land):

S. N.	Purpose	Total (ha)
1	Area to be excavated	788.874
2	Storage for top Soil	03.000
3	Over Burden / Dumps	325.000
4	Mineral Storage	0.000
5	Infrastructure (Workshop, Administrative Building)	284.634

6	Roads	07.517
7	Green Belt	10.000
8	Effluent Treatment Plant	01.000
9	Rehabilitation site (Out side mine)	69.000
10	Colony (Out side Mine)	39.000
11	Safety Zone	82.800
		45.000
	TOTAL	1655.825

Phase II: Proposed Land Use during Mining (Proposal with Fresh Forest Land)

S. N.	Purpose	Area (ha)
1	Area to be excavated	1600.000
2	Storage for Top soil	3.000
3	Overburden/Dumps	325.000
4	Mineral storage	0.000
5	Infrastructure (W/Shop, Admin. Building)	300.000
6	Roads	10.000
7	Green Belt	10.000
8	Rehabilitation Site(outside mine)	130.000
9	Colony(outside mine)	40.250
10	Safety Zone	153.000
11	Other specific (future mining)	939.098
	TOTAL	3510.348

(xviii) Total geological reserve is 1105 MT. The mineable reserve 887.726 MT (as on 01.04.2017) and extractable reserve is 887.726 MT (as on 01.04.2017). The percent of extraction would be 80.33 %.

(xix) The life of mine is 20 Years (as on 01.04.2017).

(xx) The grade of the coal is G-11 and the stripping ratio is 1.34 Cum/tonne. The average gradient varies from 4⁰ to 10⁰ in 3 seams with thickness ranging from 2.86 m to 60.83 m.

(xxi) Total estimated water requirement of the project is 16,447 cum/day. The level of ground water ranges from 1.59 m to 11.98 m in post-monsoon and 2.88 m to 14.60 m in pre-monsoon season.

(xxii) The method of mining would be opencast.

(xxiii) There are 13 external OB dumps in an area of 325 ha with quantity of 20.80 Mcum and height of 60 m above the ground level, and one internal dump with quantity of 1321.70 Mcum in an area of 1245 ha.

(xxiv) The final mine void would be in 355 ha with depth of 300 m, which is proposed to be converted into water body.

(xxv) External OB dump area and backfilled quarry area shall be reclaimed with plantation.

(xxvi) The transportation of coal from face to in-pit crusher is by trucks, from surface to siding by tippers and from siding to consumer by belt conveyor & rail.

(xxvii) Rehabilitation and resettlement is involved in the project. There are 8200 PAFs.

(xxviii) Total capital cost of the project is Rs. 7612.33 Crores.

(xxix) The CSR cost: According to new CSR policy the fund for the CSR should be allocated, based on 2% of the average net profit of the Company for the three immediate preceding

financial years or Rs. 2 per tonne of coal production of previous year, whichever is higher.
 (xxx) R&R Cost Rs. 508.28 Crores and Environmental Management Cost Rs. 575.33 Crores.
 (xxxi) Hasdeo river bank is the eastern boundary of lease. The AHIRAN River and its tributary, Laxman nallah are bounded to the lease area on the north and north-west respectively and finally drained into Hasdeo River.
 (xxxii) The ground water clearance has been obtained for the project on 16.02.2017.
 (xxxiii) There are no national parks, wildlife sanctuary, biosphere reserves in the 10 km buffer zone of the study area.
 (xxxiv) Total forest area involved is 205.961 ha in phase-1. The status of diversion of forest land for non-forestry purposes is as under:-

Area (in ha)	Stage I FC issued vide letter no. & date	Validity Period
205.961	Phase-I: Application for Diversion/Regularization proposal of 402.966 ha (which includes 205.961 ha of Revenue Forest Land of Kusmunda OCP (0-10 MTY) + 197.005 ha of Revenue Forest Land of Laxman OCP) vide Proposal No. FP/CG/MIN/22244/2005 under process for Stage-I Forestry Clearance. Proposal forwarded to MOEF&CC, New Delhi by Under Secretary, Forests, Govt. Of CG, Raipur vide his letter no. F-5-4/2007/10-2 dated 07.02.2018.	-

(xxxv) Afforestation plan shall be implemented covering an area of 1570.00 ha at the end of the mining. Density of tree plantation shall be 2500 trees/ ha of plants.

(xxxvi) There are court cases / violation pending with the project proponent as per the following details:-

SN	Case No	Parties	Brief	Present Status
1	128/2012 in the court of Judicial Magistrate, Class – 1, Katghora	CECB, Korba. Vs. SECL Kusbunda Project	A case was filed u/s 44/47 of Water Act; u/s 21/22,37,39 of Air Act; u/s 15,16 of EP Act,1986 against over production of coal in 2008 -09	Order passed on 09.06.2017 and none was found guilty.
2	Appeal No. 7/2016 in Central Zonal Bench, NGT, Bhopal	Laxmi Chauhan Vs Union of India & 02 others	An appeal has been made by Shri Laxmi Chauhan against EC granted to Kusbunda OCP (26.000 MTY) vide no. J-11015/176/2014-IA-II (M) dated 03/02/2016.	Date of Final Hearing has been fixed on 23/02/2018. Due to No Hon'ble Members is posted in this bench. The Cases listed on 23-02-2018 has been adjourned.

(xxxvii) Status of the Compliance of EC for additional control measures are as under:

S. No.	Condition in OM	Compliance
1.	Adoption of additional control measures beyond those already committed by the project proponent for production level of 26 MTPA so as to reduce the existing high levels of pollution load as shown in their study.	<p>In addition to control measures already committed for production of 26.00 MTPA, various additional measures have been adopted.</p> <p>Two nos of 42 m³ bucket capacity shovels and 20 Nos of 240 Tonne capacity dumpers have been introduced. With the higher capacity HEMM pollution load has been minimized.</p> <p>a) All mobile sprinklers have been converted from pressurized water sprinkling system to mist sprinkling system.</p> <p>b) Mist spray arrangement commissioned at 3 crushers – Westphalia, AC 2 & AC 5.</p> <p>c) Work has been completed on extension of Fixed spray sprinklers for additional length of 750 m.</p> <p>d) A proposal was initiated for conducting trial blast as a part of R&D study for control and mitigation of dust & fumes generation during drilling and blasting operations at Kusbunda OCP. Gas bags has been procured for conducting trial blast study. Trial Blast will be conducted soon.</p> <p>e) Construction of a 20,000 Te Bunker & Truck Receiving Station (CHP Phase-I) is near completion This will effectively reduce the fugitive dust emission from coal transportation</p>

		<p>trucks and the coal transported will be from a closed conveyor belt thereby reducing the emission from source itself.</p> <p>f) Proposal for dust breaking arrangement (Wind Barrier) at railway siding is under process of approval.</p> <p>g) Procurement of Mechanical sweeping machine – Tender for machine procurement has been opened and is under process.</p> <p>h) Procurement of long range fogging machine – Tender for machine procurement has been opened and is under process.</p> <p>i) The process of For setting up of 10.00 MTPA Kasmunda Washery under BOM Concept, Conceptual Report is in the process of approval.</p> <p>j) Construction of 04 nos. of SILO's with Rapid Loading System along with New Railway Siding to completely eliminate loading by pay loaders at siding resulting control of air pollution. NIT floated on 27/11/2017. Tender opened on 15/01/2018 and tender documents are under scrutiny.</p> <p>k) Installation of In Pit Belt Conveyor so that transportation of coal from Pit Bottom to Surface/Siding is completely eliminated resulting control of air pollution. NIT is being finalized by CMPDIL</p>
2.	<p>Immediate steps shall be provided for an adequate and effective green belt around the villages affected by the higher values of PM10</p>	<p>For providing an adequate and effective green belt around the villages affected by the higher values of PM10, 6855 Nos. of saplings have been planted at Bata village at an area of 2.75 ha.</p> <p>Apart from this, Action Plan for the development of Green Belt around Mine lease area and the details of the species proposed to be planted are as follows:-</p> <p>Green Belt Barrier for a width of (75-100 m) will be provided all around the periphery of the mine in Safety zone area.</p> <p>Three Tier Plantations will be done with native species (Neem, Semal, Palash, Amaltas, Gulmohar, etc.)</p> <p>Provision of Rs. 2 Crores has been made in the PR</p> <p>The proposed Green belt development along the core zone/ safety zone of the mine will be done in phased manner as per land acquisition programmes.</p>
3.	<p>After a period of six months from the date of issue of this EC, the project proponent shall report to the Ministry along with the data on air quality and control measures for the</p>	<p>Complied</p> <p>Compliance report has been submitted to MoEF vide Ref No: SECL/GM(M)/KSM/17/4471 dated 21.01.2017.</p>

	villages affected by the higher PM10 values.	
4.	Any further expansion beyond 26 MTPA shall be dependent upon the effectiveness of various control measures adopted by the proponent.	Details of additional control measures adopted beyond 26 MTY are mentioned under point 1.

(xxxviii) **Forestry Clearance:** Application for Diversion/Regularization proposal of 402.966 ha (which includes 205.961 ha of Revenue Forest Land of Kusmunda OCP (0-10 MTY) + 197.005 ha of Revenue Forest Land of Laxman OCP) vide Proposal No. FP/CG/MIN/22244/2005 under consideration for Stage-I Forestry Clearance at MOEF&CC, New Delhi.

(xxxix) Kusmunda OC is catering to most of the critical and super critical thermal power plants and at the present level of production it may complete its EC production capacity of 26 MTPA in the first week of March 2018. Kusmunda OCP will not be able to produce from 10th March, 2018 which will affect the coal supply from the mine to many of the thermal power plants including State Power Generation corporation Ltd. CSPGCL (West), NTPC Korba, NTPC Seepat, Adani Power, Balco, Lanco, Bhilai TPS etc. In view of the shortage of coal in the country and rising demand of the power, it is requested to accord the EC on priority basis in National interest.

(xi) **Following Works for additional control measures are in process :**

- Proposal for dust breaking arrangement (Wind Barrier) at railway siding is under process and the work will be completed by September, 2018.
- Mechanical sweeping machine has been introduced in SECL and will be deployed in Kusmunda OC by March, 2018
- Procurement of long range fogging machine is under process and will be deployed in Kusmunda by September, 2018.
- **CHP Phase 2:** Construction of 04 nos. of SILO's with Rapid Loading System along with New Railway Siding to completely eliminate loading by pay loaders at siding resulting control of air pollution is in process. The work will be completed by December, 2021
- **CHP Phase 3:** Installation of In Pit Belt Conveyor for transportation of coal from Pit Bottom to Surface/Siding by belt conveyor to eliminate transportation by tipperis under process. The work will be completed by December, 2023.
- **Rail corridor:** The work of East West Rail corridor is in process and it is expected to be completed by March 2020.

- **Trial Blast Study:** A proposal was initiated for conducting trial blast as a part of R&D study for control and mitigation of dust & fumes generation during drilling and blasting operations at Kusmunda OCP. Gas bags has been procured for conducting trial blast study. This work will be completed till 31st March 2018.

27.3.3 During deliberations, the EAC noted the following:-

The proposal is for environmental clearance to the project for expansion of Kusmunda Opencast coal mine from 26 MTPA to 50 MTPA M/s South Eastern Coalfields Ltd in the existing area of 1655.825 ha of located at District Korba (Chhattisgarh).

The total project area of 1655.825 ha includes total forest land 205.961 ha. Regularization of the same is under consideration of the Forest Appraisal Committee (FAC). Stage-1 Forest Clearance Proposal forwarded to MOEF&CC, New Delhi by Under Secretary, Forests, Govt. of CG, Raipur vide his letter no. F-5-4/2007/10-2 dated 7th February, 2018.

Mining plan for the proposed expansion for 50 MTPA (Normative)/62.5 MTPA (Peak) has been approved by the Board of M/s Coal India Limited in its 300th meeting held on 28th October, 2013. Mine Closure Plan is an integral part of the mine plan.

Earlier, Environmental Clearance for Kusmunda Opencast coal mine granted by the Ministry vide letter no. J-11015/176/2014-IA.II (M) dated 3rd February, 2016 for expansion from 18.75 MTPA to 26 MTPA in leasehold area of 1449.864 ha.

The proposal was originally submitted for grant of Environmental Clearance to the project for Expansion of Kusmunda Opencast Coal mine from 15 MTPA (Normative)/18.75 MTPA (Peak) to 50 MTPA(Normative)/62.50 MTPA (Peak) in ML area 3510.348 ha of M/s South Eastern Coalfields Limited at District Korba (Chhattisgarh). The public hearing held on 11th February, 2015.

The EAC after detailed deliberation on the proposal in its 49th meeting held on 7th-8th January, 2016 recommended the project for grant of Environmental clearance for a production level of 26 MTPA (peak) subject to compliance of certain specific conditions and adopting mitigative measures.

The project proponent has submitted the proposal for expansion from 26 MTPA to 50 MTPA (Normative)/ 62.50 MTPA (Peak) after taking various control measures as per EC conditions.

Status of the Compliance of specific EC conditions and additional control measures adopted by PP are found to be satisfactory.

Different works taken up under the CSR during last four years are as under and found to be satisfactory:

Year	Amount spent in Rs. lakhs	Major works
2013-14	189.53	Construction of 3 Nos room at Community Place Laxman Nagar. Construction of C. C. Road at Yamuna Nagar Rehab

		Village of Kusmunda Area. Construction of Community shed and cement concrete road at Salora village near Kusmunda area. Second Installment for Construction of Double Lane bridge at Left Bank Canal of Hasdeo Barrage.
2014-15	316.22	Construction of Nirmal Ghat at Bade Talab and Paithu Talab at Rangbel Village. Construction of Samudayik Bhawan at Amgaon Village. Construction of CC Road from House of Chandan Ram Yadav to house of Hulasram at Sonpuri Village. Construction of Samudayik Bhawan and stage at Sonpuri Village of Kusmunda Area
2015-16	138.38	Construction of new building of PRIMARY SCHOOL Badgaon instead of ruined old building; Repair/minor construction at Post Matric SC Girls Hostel ITI, Korba. Installation of solar power plant of capacity of 5 KW (along with C.O.M.C. and distribution network) in village Banjaridand-1, Block- Pondi Updora.
2016-17	1257.36	Construction of toilets and arrangement of drinking water in Govt. High School in Balgikhar. Repair/ minor construction work of Govt. Primary School, Kosmanda (Vijaynagar). Construction of boundary wall around PHC in Birda Village. Construction of 250 m boundary wall and support to the Minimata Girls College, Korba.

The Regional Office of the Ministry located at Nagpur forwarded the monitoring report on compliance status of the conditions stipulated in the last EC dated 3rd February, 2016 (based on the site visit carried out on 22nd April, 2017), vide their letter dated 13th June, 2017. Many of the conditions were found to be '*being complied with*' and/or '*partially complied*'.

The observations of the Regional Office during their site visit on 22nd April, 2017, mainly included the following:-

- (a) Existing measures to check fugitive emission appeared to be insufficient to check emissions specially spilling, transportation and in CHP area.
- (b) Development of green belt is in nascent stage. The greenbelt of adequate width needs to be developed around the mine lease area, coal handling plant, OB dump sites, etc.
- (c) Management of garland drains and catch drains was observed to be poor state.
- (d) No action has been undertaken for restoration and stabilization of OB.
- (e) Road inside the lease area observed to laden with coal dust having poor drainage system.
- (f) No ETP has been provided for treatment of CHP waste water. Only siltation pond for settling and recycling of CHP effluent has been constructed

The EAC expressed its deep concern over the prevailing environmental settings and the status of statutory compliances.

Kusmunda OC is catering to most of the critical and super critical thermal power plants including State Power Generation Corporation Ltd., CSPGCL (West), NTPC Korba, NTPC Seepat, Adani Power, Balco, Lanco, Bhilai TPS etc.. The project has already achieved its production capacity of 26 MTPA and would reported to be non-operational from 10th March, 2018 due to non-availability of EC for higher capacity. In view of the shortage of coal in the country and the resulting power crisis, there is a pressing demand for grant of Environmental Clearance to the expansion project in National interest.

In view of reported shortage of coal, present environmental concerns, pollution load and the proposed mitigating measures, transportation facilities, infrastructure available etc, it was opined to recommend the project for expansion up to 36 MTPA i.e. 40% in excess of the current level of annual production and that too for a period of one year only i.e. up to 31st March, 2019.

Further, due to higher pollution load, the EAC suggested to review compliance of the actions taken on observations of the Regional Office before December 2018, so as to make further recommendations for continuance of the EC in respect of the project thereafter.

27.3.4 *The EAC, after deliberations recommended the project for grant of Environmental Clearance to the expansion of Kusmunda Opencast Coal Mine from 26 MTPA to 36 MTPA of M/s South Eastern Coalfields Limited in an area of 1655.825 ha located in District Korba (Chhattisgarh) for the period of one year, i.e. up to 31st March, 2019 and subject to the compliance of terms and conditions as applicable, and the additional conditions as under:-*

- (i) The project proponent shall obtain the prior clearances for regularization and /or diversion of the forest land of 205.961 ha from the concerned regulatory authority to enable its use for non forestry purpose.*
- (ii) The project proponent shall collect and analyze one season base line data for environmental parameters, preferably during April-June, 2018, and submit for consideration of the EAC before 31st December, 2018.*
- (iii) The project proponent shall also submit the details regarding action taken on different observations of the Regional Office before 31st December, 2018, for the Committee to examine adequacy and efficacy of the pollution control measures and its impact on ambient air quality and to make recommendations for continuance of the project thereafter.*
- (iv) To control the production of dust at source, the crusher and in-pit belt conveyors shall be provided with mist type sprinklers.*
- (v) Mitigative measures shall be undertaken to control dust and other fugitive emissions all along the roads by providing sufficient numbers of water sprinklers. Adequate corrective measures shall be undertaken to control dust emissions as presented before the Committee, which would include mechanized sweeping, water sprinkling/mist spraying on haul roads and loading sites, long range misting/fogging arrangement, wind barrier wall and vertical greenery system, green belt, dust suppression arrangement at railway siding, etc.*
- (vi) Persons of nearby villages shall be given training on livelihood and skill development to make them employable.*
- (vii) To ensure health and welfare of nearby villages, regular medical camps shall be organized at least once in six months.*
- (viii) Thick green belt of 75 m width at the final boundary in the down wind direction of the project site shall be developed to mitigate/check the dust pollution.*

- (ix) A third party assessment of EC compliance shall be undertaken once in 03 year through agency like ICFRI /NEERI/IIT or any other expert agency identified by the Ministry.
- (x) The coal company/project proponent shall be liable to pay the compensation against the illegal mining, if any, and as raised by the respective State Governments at any point of time, in terms of the orders dated 2nd August, 2017 of Hon'ble Supreme Court in WP (Civil) No.114/2014 in the matter of 'Common Cause Vs Union of India & others'.
- (xi) The project proponent, without prejudice to this environmental clearance, shall be bound to comply with any other interpretation of the orders of Hon'ble Supreme Court also, in due course of time.

PARTICIPANTS IN 27th EXPERT APPRAISAL COMMITTEE (EAC) (THERMAL & COAL MINING) MEETING HELD ON 27th February. 2018 ON COAL SECTOR PROJECTS.

Sl. No.	List Of Participants Expert Appraisal Committee (Coal Mining)	
1.	Dr. Navin Chandra	Chairman
2.	Dr. Narmada Prasad Shukla	Member
3.	Dr. Jai Krishna Pandey	Member
4.	Sh. N. Mohan Karnat	Member
5.	Shri. N. S. Mondal	Member
6.	Shri Om Prakash	Member
7.	Shri G.P. Kundargi	Member
8.	Shri S. K. Srivastava	Member Secretary

PARTICIPANTS IN 27th EXPERT APPRAISAL COMMITTEE (EAC) (THERMAL & COAL MINING) MEETING HELD ON 27th February, 2018 ON COAL SECTOR PROJECTS.

27.1 Kulda Expansion OCP of M/s MCL

1. Shri O. P. Singh
2. Shri A.K. Samantaray
3. Shri N.Kalla
4. Shri C.Jayadev
5. Shri R.C.Sahoo
6. Shri Raji Joshra
7. Shri Neeraj Kumar Singh
8. Shri Amarjeet Singh
9. Shri Abhishek Kumar

27.2 Standardization of Environmental Clearance Conditions for Opencast Coal, Underground mines and Coal Washery projects

27.3 Discussion on any other item

Kusmunda OCP of M/s SECL

1. Shri K. Prasad
2. Shri U. K. Singh
3. Shri S. Shrivastava
4. Shri A.S. Bapat
5. Shri S.R.Tripathi
6. Shri D.C.Kundn
7. Shri A.K.Tiwari
8. Shri Ashutosh
9. Shri Pravin Shrivastava

Generic ToR for coal washery

- i. Siting of washery is critical considering to its environmental impacts. Preference should be given to the site located at pit head; in case such a site is not available, the site should be as close to the pit head as possible and coal should be transported from mine to the washery preferably through closed conveyer belt to avoid air pollution.
- ii. The washery shall not be located in eco-sensitive zones areas.
- iii. The washery should have a closed system and zero discharge. The storm drainage should be treated in settling ponds before discharging into rivers/streams/water bodies.
- iv. A thick Green belt of about 50 m width should be developed surrounding the washery.
- v. A brief description of the plant alongwith a layout, the specific technology used and the source of coal should be provided.
- vi. The EIA-EMP Repot should cover the impacts and management plan for the project of the capacity for which EC is sought and the impacts of specific activities, including the technology used and coal used, on the environment of the area (within 10km radius), and the environmental quality of air, water, land, biotic community, etc. through collection of data and information, generation of data on impacts for the rated capacity. Cumulative impacts for air and water should be a part of EIA in case coal mine, TPP and other washeries are located within 10km radius. The EIA should also include mitigative measures needed to minimize adverse environmental impacts.
- vii. A Study Area Map of the core zone as well as the 10km area of buffer zone showing major industries/mines and other polluting sources should be submitted. These maps shall also indicate the migratory corridors of fauna, if any and areas of endangered fauna; plants of medicinal and economic importance; any ecologically sensitive areas within the 10 km buffer zone; the shortest distance from the National Park/WL Sanctuary Tiger Reserve, etc. alongwith the comments of the Chief Wildlife Warden of the State Govt.
- viii. Data of one-season (non-monsoon) primary- base-line data on environmental quality of air (PM₁₀, PM_{2.5}, SO_x and NO_x, noise, water (surface and groundwater), soil be submitted.
- ix. The wet washery should generally utilize mine water only. In case mine water is not available, the option of storage of rain water and its use should be examined. Use of surface water and ground water should be avoided.
- x. Detailed water balance should be provided. The break-up of water requirement as per different activities in the mining operations vis-a-vis washery should be given. If the source of water is from surface water and/or ground water, the same may be justified besides obtaining approval of the Competent Authority for its drawl.
- xi. The entire sequence of mineral production, transportation, handling, transfer and storage of mineral and waste, if any, and their impacts on air quality should be shown in a flow chart with specific points where fugitive emissions can arise and specific pollution control/mitigative measures proposed to be put in place. The washed coal and rejects should be transport by train as far as possible. Road transport of washed coal and rejects should generally be avoided. In case, the TPP is within 10km radius, it should be through conveyer belt. If transport by rail is not feasible because of the topography of the area, the option for transport by road be examined in detail and its impacts along with the mitigation measures should be clearly brought out in EIA/EMP report.
- xii. Details of various facilities proposed to be provided in terms of parking, rest areas, canteen etc. to the personnel involved in mineral transportation, workshop and effluents/pollution load from these activities should be provided.

- xiii. Impacts of CHP, if any, on air and water quality should also be spelt out alongwith Action Plan.
- xiv. O.M.no.J-II013/25/2014-IA.I dated 11th August, 2014 to be followed with regard to CSR activities.
- xv. Details of Public Hearing, Notice(s) issued in newspapers, proceedings/minutes of Public Hearing, points raised by the general public and response/commitments made by the proponent along with the Action Plan and budgetary provisions be submitted in tabular form. If the Public Hearing is in the regional language, an authenticated English translation of the same should be provided. Status of any litigations/ court cases filed/pending, if any, against the project should be mentioned in EIA.
- xvi. Analysis of samples indicating the following be submitted:
 - Characteristics of coal prior to washing (this includes grade of coal, other characteristics of ash, S and heavy levels of metals such as Hg, As, Pb, Cr etc).
 - Characteristics and quantum of coal after washing.
 - Characteristics and quantum of coal rejects.
- xvii. Details of management/disposal/use of coal rejects should be provided. The rejects should be used in TPP located close to the washery as far as possible. If TPP is within a reasonable distance (10 km), transportation should be by conveyor belt. If it is far away, the transportation should be by rail as far as possible.
- xviii. Copies of MOU/Agreement with linkages (for stand-alone washery) for the capacity for which EC is being sought should be submitted.
- xix. Corporate Environment Responsibility:
 - a) The Company must have a well laid down Environment Policy approved by the Board of Directors.
 - b) The Environment Policy must prescribe for standard operating process/procedures to bring into focus any infringements/deviation/violation of the environmental or forest norms/conditions.
 - c) The hierarchical system or Administrative Order of the company to deal with environmental issues and for ensuring compliance with the environmental clearance conditions must be furnished.
 - d) To have proper checks and balances, the company should have a well laid down system of reporting of non-compliances/violations of environmental norms to the Board of Directors of the company and/or shareholders or stakeholders at large.
- xx. A detailed action Plan for Corporate Social Responsibility for the project affected people and people living in and around the project area should be provided.
- xxi. Permission of drawl of water shall be pre-requisite for consideration of EC.
- xxii. Wastewater /effluent should conform to the effluent standards as prescribed under Environment (Protection) Act, 1986
- xxiii. Details of washed coal, middling and rejects along with the MoU with the end-users should be submitted.

GENERIC TOR FOR AN OPENCAST COALMINE PROJECT for EC

- (i) An EIA-EMP Report shall be prepared for..... MTPA rated capacity in an ML/project area of.....ha based on the generic structure specified in Appendix III of the EIA Notification, 2006.
- (ii) An EIA-EMP Report would be prepared for..... MTPA rated capacity to cover the impacts and environment management plan for the project specific activities on the environment of the region, and the environmental quality encompassing air, water, land, biotic community, etc. through collection of data and information, generation of data on impacts including prediction modeling for..... MTPA of coal production based on approved project/Mining Plan for.....MTPA. Baseline data collection can be for any season (three months) except monsoon.
- (iii) A toposheet specifying locations of the State, District and Project site should be provided.
- (iv) A Study area map of the core zone (project area) and 10 km area of the buffer zone (1: 50,000 scale) clearly delineating the major topographical features such as the land use, surface drainage pattern including rivers/streams/nullahs/canals, locations of human habitations, major constructions including railways, roads, pipelines, major industries/mines and other polluting sources. In case of ecologically sensitive areas such as Biosphere Reserves/National Parks/WL Sanctuaries/ Elephant Reserves, forests (Reserved/Protected), migratory corridors of fauna, and areas where endangered fauna and plants of medicinal and economic importance found in the 15 km study area should be given.
- (v) Land use map (1: 50,000 scale) based on a recent satellite imagery of the study area may also be provided with explanatory note on the land use.
- (vi) Map showing the core zone delineating the agricultural land (irrigated and un-irrigated, uncultivable land as defined in the revenue records, forest areas (as per records), along with other physical features such as water bodies, etc should be furnished.
- (vii) A contour map showing the area drainage of the core zone and 25 km of the study area (where the water courses of the core zone ultimately join the major rivers/streams outside the lease/project area) should also be clearly indicated in the separate map.
- (viii) A detailed Site plan of the mine showing the proposed break-up of the land for mining operations such as the quarry area, OB dumps, green belt, safety zone, buildings, infrastructure, CHP, ETP, Stockyard, township/colony (within and adjacent to the ML), undisturbed area -if any, and landscape features such as existing roads, drains/natural water bodies to be left undisturbed along with any natural drainage adjoining the lease /project areas, and modification of thereof in terms of construction of embankments/bunds, proposed diversion/re-channelling of the water courses, etc., approach roads, major haul roads, etc should be indicated.
- (ix) In case of any proposed diversion of nallah/canal/river, the proposed route of diversion /modification of drainage and their realignment, construction of embankment etc. should also be shown on the map as per the approval of Irrigation and flood control Department of the concerned state.
- (x) Similarly if the project involves diversion of any road/railway line passing through the ML/project area, the proposed route of diversion and its realignment should be shown in the map along with the status of the approval of the competent authority.
- (xi) Break up of lease/project area as per different land uses and their stage of acquisition should be provided.

LANDUSE DETAILS FOR OPENCAST PROJECT should be given as per the following table:

Sl. No.	Landuse	Within ML area (ha)	Outside ML area (ha)	Total
1.	Agricultural land			
2.	Forest land			
3.	Wasteland			
4.	Grazing land			
5.	Surface water bodies			
6.	Settlements			
7.	Others (specify)			
	TOTAL			

- (xii) Break-up of lease/project area as per mining plan should be provided.
- (xiii) Impact of changes in the land use due to the project if the land is predominantly agricultural land/forestland/grazing land, should be provided.
- (xiii) One-season (other than monsoon) primary baseline data on environmental quality - air (PM₁₀, PM_{2.5}, SO_x, NO_x and heavy metals such as Hg, Pb, Cr, As, etc), noise, water (surface and groundwater), soil - along with one-season met data coinciding with the same season for AAQ collection period should be provided.
- (xiv) Map (1: 50, 000 scale) of the study area (core and buffer zone) showing the location of various sampling stations superimposed with location of habitats, other industries/mines, polluting sources, should be provided. The number and location of the sampling stations in both core and buffer zones should be selected on the basis of size of lease/project area, the proposed impacts in the downwind (air)/downstream (surface water)/groundwater regime (based on flow). One station should be in the upwind/upstream/non-impact/non-polluting area as a control station. The monitoring should be as per CPCB guidelines and parameters for water testing for both ground water and surface water as per ISI standards and CPCB classification wherever applicable. Observed values should be provided along with the specified standards.
- (xv) Study on the existing flora and fauna in the study area (10km) should be carried out by an institution of relevant discipline. The list of flora and fauna duly authenticated separately for the core and study area and a statement clearly specifying whether the study area forms a part of the migratory corridor of any endangered fauna should be given. If the study area has endangered flora and fauna, or if the area is occasionally visited or used as a habitat by Schedule-I species, or if the project falls within 15 km of an ecologically sensitive area, or used as a migratory corridor then a Comprehensive Conservation Plan along with the appropriate budgetary provision should be prepared and submitted with EIA-EMP Report; and comments/observation from the CWLW of the State Govt. should also be obtained and furnished.
- (xvi) Details of mineral reserves, geological status of the study area and the seams to be worked, ultimate working depth and progressive stage-wise working scheme until the end of mine life should be provided on the basis of the approved rated capacity and calendar plans of production from the approved Mining Plan. Geological maps and sections should be included. The Progressive mine development and Conceptual Final Mine Closure Plan should also be shown in figures. Details of mine plan and mine closure plan approval of

Competent Authority should be furnished for green field and expansion projects.

- (xvii) Details of mining methods, technology, equipment to be used, etc., rationale for selection of specified technology and equipment proposed to be used vis-à-vis the potential impacts should be provided.
- (xviii) Impact of mining on hydrology, modification of natural drainage, diversion and channeling of the existing rivers/water courses flowing through the ML and adjoining the lease/project and the impact on the existing users and impacts of mining operations thereon.
- (xix) Detailed water balance should be provided. The break-up of water requirement for the various mine operations should be given separately.
- (xx) Source of water for use in mine, sanction of the Competent Authority in the State Govt. and impacts vis-à-vis the competing users in the upstream and downstream of the project site. should be given.
- (xxi) Impact of mining and water abstraction from the mine on the hydrogeology and groundwater regime within the core zone and 10 km buffer zone including long-term monitoring measures should be provided. Details of rainwater harvesting and measures for recharge of groundwater should be reflected in case there is a declining trend of groundwater availability and/or if the area falls within dark/grey zone.
- (xxii) Impact of blasting, noise and vibrations should be given.
- (xxiii) Impacts of mining on the AAQ and predictions based on modeling using the ISCST-3 (Revised) or latest model should be provided.
- (xxiv) Impacts of mineral transportation within the mining area and outside the lease/project along with flow-chart indicating the specific areas generating fugitive emissions should be provided. Impacts of transportation, handling, transfer of mineral and waste on air quality, generation of effluents from workshop etc, management plan for maintenance of HEMM and other machinery/equipment should be given. Details of various facilities such as rest areas and canteen for workers and effluents/pollution load emanating from these activities should also be provided.
- (xxv) Effort be made to reduce/eliminate road transport of coal inside and outside mine and for mechanized loading of coal through CHP/ Silo into wagons and trucks/tippers.
- (xxvi) Details of waste OB and topsoil generated as per the approved calendar programme, and their management shown in figures as well explanatory notes tables giving progressive development and mine closure plan, green belt development, backfilling programme and conceptual post mining land use should be given. OB dump heights and terracing based on slope stability studies with a max of 28° angle as the ultimate slope should be given. Sections of final dumps (both longitudinal and cross section) with relation to the adjacent area should be shown.
- (xxvii) Efforts be made for maximising progressive internal dumping of O.B., sequential mining , external dump on coal bearing area and later rehandling into the mine void.--to reduce land degradation.
- (xxviii) Impact of change in land use due to mining operations and plan for restoration of the mined area to its original land use should be provided.
- (xxix) Progressive Green belt and ecological restoration /afforestation plan (both in text, figures and in the tabular form as per the format of MOEFCC given below) and selection of species (native) based on original survey/land-use should be given.

Table 1: Stage-wise Landuse and Reclamation Area (ha)

S.N.	Land use Category	Present (1 st Year)	5 th Year	10 th Year	20 th Year	24 th Year (end of mine life)*
1.	Backfilled Area(Reclaimed with plantation)					
2.	Excavated Area (not reclaimed)/void					
3.	External OB dump Reclaimed with plantation)					
4.	Reclaimed Top soil dump					
5.	Green Built Area					
6.	Undisturbed area (brought under plantation)					
7.	Roads (avenue plantation)					
8.	Area around buildings and Infrastructure					
	TOTAL					

* As a representative example

Table 2 : Stage Wise Cumulative Plantation

S.N.	YEAR*	Green Belt	External Dump	Backfilled Area	Others(Undisturbed Area/etc)	TOTAL
1.	1 st year					
2.	3 rd year					
3.	5 th year					
4.	10 th year					
5.	15 th year					
6.	20 th year					
7.	25 th year					
8.	30 th year					
9.	34 th year(end of mine life)					
10.	34- 37 th Year (Post-mining)					

* As a representative example

(xxix) Conceptual Final Mine Closure Plan and post mining land use and restoration of land/habitat to the pre- mining status should be provided. A Plan for the ecological restoration of the mined out area and post mining land use should be prepared with detailed cost provisions. Impact and management of wastes and issues of re-handling (wherever applicable) and backfilling and progressive mine closure and reclamation should be furnished.

Table 3: Post-Mining Landuse Pattern of ML/Project Area (ha)

S.N.	Land use during Mining	Land Use (ha)				
		Plantation	Water Body	Public Use	Undisturbed	TOTAL
1.	External OB Dump					
2.	Top soil Dump					
3.	Excavation					
4.	Roads					
5.	Built up area					
6.	Green Belt					
7.	Undisturbed Area					
	TOTAL					110

(xxx) Flow chart of water balance should be provided. Treatment of effluents from workshop, township, domestic wastewater, mine water discharge, etc. should be provided. Details of STP in colony and ETP in mine should be given. Recycling of water to the max. possible extent should be done.

(xxxi) Occupational health issues. Baseline data on the health of the population in the impact zone and measures for occupational health and safety of the personnel and manpower in the mine should be given.

(xxxii) Risk Assessment and Disaster Preparedness and Management Plan should be provided.

(xxxiii) Integration of the Env. Management Plan with measures for minimizing use of natural resources - water, land, energy, etc. should be carried out.

(xxxiv) Cost of EMP (capital and recurring) should be included in the project cost and for progressive and final mine closure plan.

(xxxv) Details of R&R. Detailed project specific R&R Plan with data on the existing socio-economic status of the population (including tribals, SC/ST, BPL families) found in the study area and broad plan for resettlement of the displaced population, site for the resettlement colony, alternate livelihood concerns/employment for the displaced people, civic and housing amenities being offered, etc and costs along with the schedule of the implementation of the R&R Plan should be given.

(xxxvi) CSR Plan along with details of villages and specific budgetary provisions (capital and recurring) for specific activities over the life of the project should be given.

(xxxvii) Corporate Environment Responsibility:

a) The Company must have a well laid down Environment Policy approved by the Board of Directors.

b) The Environment Policy must prescribe for standard operating process/procedures

to bring into focus any infringements/deviation/violation of the environmental or forest norms/conditions.

- c) The hierarchical system or Administrative Order of the company to deal with environmental issues and for ensuring compliance with the environmental clearance conditions must be furnished.
 - d) To have proper checks and balances, the company should have a well laid down system of reporting of non-compliances/violations of environmental norms to the Board of Directors of the company and/or shareholders or stakeholders at large.
- (xxxviii) Details on Public Hearing should cover the information relating to notices issued in the newspaper, proceedings/minutes of Public Hearing, the points raised by the general public and commitments made by the proponent and the action proposed with budgets in suitable time frame. These details should be presented in a tabular form. If the Public Hearing is in the regional language, an authenticated English Translation of the same should be provided.
- (xxxix) In built mechanism of self-monitoring of compliance of environmental regulations should be indicated.
- (xl) Status of any litigations/ court cases filed/pending on the project should be provided.
 - (xli) Submission of sample test analysis of Characteristics of coal: This should include details on grade of coal and other characteristics such as ash content, S and heavy metals including levels of Hg, As, Pb, Cr etc.
 - (xlii) Copy of clearances/approvals such as Forestry clearances, Mining Plan Approval, mine closer plan approval. NOC from Flood and Irrigation Dept. (if req.), etc. wherever applicable.

FOREST CLEARANCE: Details on the Forest Clearance should be given as per the format given:

TOTAL ML/PROJECT AREA (ha)	TOTAL FORESTLAND (ha)	Date of FC	Extent of forestland	Balance area for which FC is yet to be obtained	Status of appl for. diversion of forestland
		If more than , provide details of each FC			

GENERIC TORs FOR AN UNDERGROUND COALMINE PROJECT

- (i) An EIA-EMP Report shall be prepared for..... MTPA rated capacity in an ML/project area of.....ha based on the generic structure specified in Appendix III of the EIA Notification, 2006.
- (ii) An EIA-EMP Report would be prepared for..... MTPA rated capacity to cover the impacts and environment management plan for the project specific activities on the environment of the region, and the environmental quality encompassing air, water, land, biotic community, etc. through collection of data and information, generation of data on impacts including prediction modeling for..... MTPA of coal production based on approved project/Mining Plan for.....MTPA. Baseline data collection can be for any season (three months) except monsoon.
- (iii) A Study area map of the core zone (project area) and 10 km area of the buffer zone (1: 50,000 scale) clearly delineating the major topographical features such as the land use, surface drainage pattern including rivers/streams/nullahs/canals, locations of human habitations, major constructions including railways, roads, pipelines, major industries/mines and other polluting sources. In case of ecologically sensitive areas such as Biosphere Reserves/National Parks/WL Sanctuaries/ Elephant Reserves, forests (Reserved/Protected), migratory corridors of fauna, and areas where endangered fauna and plants of medicinal and economic importance found in the 15 km study area should be given.
- (iv) Map showing the core zone delineating the agricultural land (irrigated and un-irrigated, uncultivable land as defined in the revenue records, forest areas (as per records), along with other physical features such as water bodies, etc should be furnished.
- (v) A contour map showing the area drainage of the core zone and 25 km of the study area (where the water courses of the core zone ultimately join the major rivers/streams outside the lease/project area) should also be clearly indicated in the separate map.
- (vi) A detailed Site plan of the mine showing the proposed break-up of the land for mining operations such as the quarry area, OB dumps, green belt, safety zone, buildings, infrastructure, CHP, ETP, Stockyard, township/colony (within and adjacent to the ML), undisturbed area -if any, and landscape features such as existing roads, drains/natural water bodies to be left undisturbed along with any natural drainage adjoining the lease /project areas, and modification of thereof in terms of construction of embankments/bunds, proposed diversion/re-channelling of the water courses, etc., approach roads, major haul roads, etc should be indicated.
- (vii) Original land use (agricultural land/forestland/grazing land/wasteland/water bodies) of the area should be provided as per the tables given below. Impacts of project, if any on the land use, in particular, agricultural land/forestland/grazing land/water bodies falling within the lease/project and acquired for mining operations should be analyzed. Extent of area under surface rights and under mining rights should be specified.

S.N	ML/Project Land use	Area under Surface Rights(ha)	Area Under Mining Rights (ha)	Area under Both (ha)
1.	Agricultural land			
2.	Forest Land			

3.	Grazing Land			
4.	Settlements			
5.	Others (specify)			

Area under Surface Rights

S.N.	Details	Area (ha)
1.	Buildings	
2.	Infrastructure	
3.	Roads	
4.	Others (specify)	
	TOTAL	

- (viii) Study on the existing flora and fauna in the study area (10km) should be carried out by an institution of relevant discipline. The list of flora and fauna duly authenticated separately for the core and study area and a statement clearly specifying whether the study area forms a part of the migratory corridor of any endangered fauna should be given. If the study area has endangered flora and fauna, or if the area is occasionally visited or used as a habitat by Schedule-I species, or if the project falls within 15 km of an ecologically sensitive area, or used as a migratory corridor then a Comprehensive Conservation Plan along with the appropriate budgetary provision should be prepared and submitted with EIA-EMP Report; and comments/observation from the CWLW of the State Govt. should also be obtained and furnished.
- (ix) Details of mineral reserves, geological status of the study area and the seams to be worked, ultimate working depth and progressive stage-wise working scheme until the end of mine life should be provided on the basis of the approved rated capacity and calendar plans of production from the approved Mining Plan. Geological maps and sections should be included. The Progressive mine development and Conceptual Final Mine Closure Plan should also be shown in figures. Details of mine plan and mine closure plan approval of Competent Authority should be furnished for green field and expansion projects.
- (x) Details of mining methods, technology, equipment to be used, etc., rationale for selection of specified technology and equipment proposed to be used vis-à-vis the potential impacts should be provided.
- (xi) Impact of mining on hydrology, modification of natural drainage, diversion and channeling of the existing rivers/water courses flowing through the ML and adjoining the lease/project and the impact on the existing users and impacts of mining operations thereon.
- (xii) One-season (other than monsoon) primary baseline data on environmental quality - air (PM₁₀, PM_{2.5}, SO_x, NO_x and heavy metals such as Hg, Pb, Cr, As, etc), noise, water (surface and groundwater), soil - along with one-season met data coinciding with the same season for AAQ collection period should be provided.
- (xiii) Map (1: 50, 000 scale) of the study area (core and buffer zone) showing the location of various sampling stations superimposed with location of habitats, other industries/mines, polluting sources, should be provided. The number and location of the sampling stations in both core and buffer zones should be selected on the basis of size of lease/project area, the proposed impacts in the downwind (air)/downstream (surface water)/groundwater regime (based on flow). One station should be in the upwind/upstream/non-impact/non-polluting area as a control station. The monitoring

should be as per CPCB guidelines and parameters for water testing for both ground water and surface water as per ISI standards and CPCB classification wherever applicable. Observed values should be provided along with the specified standards.

- (xiv) Impact of mining and water abstraction from the mine on the hydrogeology and groundwater regime within the core zone and 10 km buffer zone including long-term monitoring measures should be provided. Details of rainwater harvesting and measures for recharge of groundwater should be reflected in case there is a declining trend of groundwater availability and/or if the area falls within dark/grey zone.
- (xv) Study on subsidence including modeling for prediction, mitigation/prevention of subsidence, continuous monitoring measures, and safety issues should be carried out.
- (xvi) Detailed water balance should be provided. The break up of water requirement as per different activities in the mining operations, including use of water for sand stowing should be given separately. Source of water for use in mine, sanction of the Competent Authority in the State Govt. and impacts vis-à-vis the competing users should be provided.
- (xvii) Impact of choice of mining method, technology, selected use of machinery and impact on air quality, mineral transportation, coal handling & storage/stockyard, etc, Impact of blasting, noise and vibrations should be provided.
- (xviii) Impacts of mineral transportation within the mining area and outside the lease/project along with flow-chart indicating the specific areas generating fugitive emissions should be provided. Impacts of transportation, handling, transfer of mineral and waste on air quality, generation of effluents from workshop etc, management plan for maintenance of HEMM and other machinery/equipment should be given. Details of various facilities such as rest areas and canteen for workers and effluents/pollution load emanating from these activities should also be provided.
- (xix) Effort be made to reduce/eliminate road transport of coal inside and outside mine and for mechanized loading of coal through CHP/ Silo into wagons and trucks/tippers.
- (xx) Details of various facilities to be provided to the workers in terms of parking, rest areas and canteen, and effluents/pollution load resulting from these activities should also be given.
- (xxi) The number and efficiency of mobile/static water sprinkling system along the main mineral transportation road inside the mine, approach roads to the mine/stockyard/siding, and also the frequency of their use in impacting air quality should be provided.
- (xxii) Impacts of CHP, if any on air and water quality should be given. A flow chart showing water balance along with the details of zero discharge should be provided.
- (xxiii) Conceptual Final Mine Closure Plan and post mining land use and restoration of land/habitat to the pre- mining status should be provided. A Plan for the ecological restoration of the mined out area and post mining land use should be prepared with detailed cost provisions. Impact and management of wastes and issues of re-handling (wherever applicable) and backfilling and progressive mine closure and reclamation should be furnished.
- (xxiv) Greenbelt development should be undertaken particularly around the transport route and CHP. Baseline data on the health of the population in the impact zone and measures for occupational health and safety of the personnel and manpower for the mine should be submitted.
- (xxv) Cost of EMP (capital and recurring) should be included in the project cost and for progressive and final mine closure plan.
- (xxvi) Details of R&R. Detailed project specific R&R Plan with data on the existing socio-economic status of the population (including tribals, SC/ST, BPL families) found in the

study area and broad plan for resettlement of the displaced population, site for the resettlement colony, alternate livelihood concerns/employment for the displaced people, civic and housing amenities being offered, etc and costs along with the schedule of the implementation of the R&R Plan should be given.

(xxvii) CSR Plan along with details of villages and specific budgetary provisions (capital and recurring) for specific activities over the life of the project should be given.

(xxviii) Corporate Environment Responsibility:

a) The Company must have a well laid down Environment Policy approved by the Board of Directors.

b) The Environment Policy must prescribe for standard operating process/procedures to bring into focus any infringements/deviation/violation of the environmental or forest norms/conditions.

c) The hierarchical system or Administrative Order of the company to deal with environmental issues and for ensuring compliance with the environmental clearance conditions must be furnished.

d) To have proper checks and balances, the company should have a well laid down system of reporting of non-compliances/violations of environmental norms to the Board of Directors of the company and/or shareholders or stakeholders at large.

(xxix) Details on Public Hearing should cover the information relating to notices issued in the newspaper, proceedings/minutes of Public Hearing, the points raised by the general public and commitments made by the proponent and the action proposed with budgets in suitable time frame. These details should be presented in a tabular form. If the Public Hearing is in the regional language, an authenticated English Translation of the same should be provided.

(xxx) In built mechanism of self-monitoring of compliance of environmental regulations should be indicated.

(xxxi) Status of any litigations/ court cases filed/pending on the project should be provided.

(xxxii) Submission of sample test analysis of Characteristics of coal: This should include details on grade of coal and other characteristics such as ash content, S and heavy metals including levels of Hg, As, Pb, Cr etc.

(xxxiii) Copy of clearances/approvals such as Forestry clearances, Mining Plan Approval, mine closer plan approval. NOC from Flood and Irrigation Dept. (if req.), etc. wherever applicable.

Details on the Forest Clearance should be given as per the format given:

Total ML /Project Area (ha)	Total Forest Land (ha)	Date of FC	Extent of Forest Land	Balance area for which FC is yet to be obtained	Status of appl. For diversion of forest land
		If more than one provide details of each FC			

GENERIC TORs FOR AN OPENCAST-CUM-UNDERGROUND COALMINE PROJECT

- (i) An EIA-EMP Report would be prepared for a combined peak capacity ofMTPA for OC-cum-UG project which consists of MTPA in an ML/project area of ha for OC and MTPA for UG in an ML/project area of ha based on the generic structure specified in Appendix III of the EIA Notification 2006.
- (ii) An EIA-EMP Report would be prepared for..... MTPA rated capacity to cover the impacts and environment management plan for the project specific activities on the environment of the region, and the environmental quality encompassing air, water, land, biotic community, etc. through collection of data and information, generation of data on impacts including prediction modeling for..... MTPA of coal production based on approved project/Mining Plan for.....MTPA. Baseline data collection can be for any season (three months) except monsoon.
- (iii) The ToRs prescribed for both opencast and underground mining are applicable for opencast – cum-underground mining.

09/03/2018

https://mail.gov.in/iwc_static/layout/shell.html?lang=en&3.0.1.2.0_15121607

Subject: **Re: Finalized minutes of the 27th meeting of the EAC held on 27th February, 2018 for appraisal of Coal mining projects**

Date: 03/09/18 01:27 PM

To: Purushottam ramdas Sakhare <sakhare.pr@nic.in>

From: navin chandra <navinchandrarrl@yahoo.com>

09/03/2018

Dear Dr. Sakhare/Dr. Shrivastava Ji,

I have gone through the Minutes document of the 27th meeting of the EAC held on 27th February, 2018. It is in order. Please upload it on the web site of the MoEF&CC following the due process.

Regards,

(NAVIN CHANDRA)

Dr. Navin Chandra,
Director General
M P Council of Science and Technology (MPCST),
Vigyan Bhawan, Nehru Nagar, Bhopal - 462003 (M.P.) India
Phone : 91-755- 2671800 (Office)
e-mail : dg@mpcost.nic.in
navinchandrarrl@yahoo.com, navinchandraampri@gmail.com

On Thursday, March 08, 2018 06:57:00 PM IST, Purushottam ramdas Sakhare <sakhare.pr@nic.in> wrote:

Respected Chairman Sir,

As discussed with Shri, S K Srivastava, (Member Secretary), please find attached Minutes slightly revised for approval

With regards

P R Sakhare

**Agenda for 27th EAC (THERMAL & COAL MINING PROJECTS) MEETING
SCHEDULED FOR 27 February, 2018.**

**Venue: Indus Conference Hall, Ground Floor, Jal Wing,
Indira Paryavaran Bhawan, Jorbagh, New Delhi-110003.**

Pl. check the MoEF website: <http://environmentclearance.nic.in/Report/Default3.aspx>

Important Note:

Please send the information as per Annexure 1 by E-mail in word format and also a signed & scanned copy, to the Member-Secretary at sk.smree66@nic.in at least one week prior to the EAC meeting.

- i. Please send soft copies of all project-related documents that have been uploaded onto the MOEFCC website to EAC members by e-mail [indicating agenda item numbers] immediately upon receiving this communication, and send hard copies of the same documents [indicating agenda items] to all the EAC members, at least one week prior to the meeting and ensure the receipt of same.**
- ii. Non receipt of the project will lead to deferment of the project.**
- iii. Please also provide a hard copy of presentation to the EAC Members during the meeting.**
- iv. The Project Proponent should carry the KML/Shape Files of the mine lease area at the time of presentation before EAC and to present on the details of mine lease online to show the present status of mine lease**
- v. The KML/Shape files should be emailed on the below mentioned email addresses at least 10 days prior to the meeting**
- vi. The Project Proponent to show the transportation route of minerals on maps during presentation.**
- vii. Without this information, EAC has discretion to invite the proponent for the meeting.**
- viii. No consultant is permitted into the meeting who has no accreditation with Quality Council of India (QCI) /National Accreditation Board of Education and Training (NABET) as per the MoEF OM dated 2nd December, 2009**

COAL MINING PROJECTS

Time: 10.00 AM: Thursday: 27 Tuesday, 2018

27.1 Expansion of Kulda Expansion OCP from 10.0 MTPA to 15.0 MTPA of M/s Mahanadi Coalfields Limited in an ML area of 634.205 ha located in Tehsil Himgir, District Sundergarh (Odisha) - For EC

[IA/OR/CMIN/61822/2017, F.No. J-11015/3/2017-IA-II(M)]

27.2 Standardization of Environmental Clearance Conditions for Opencast Coal, Underground mines and Coal Washery projects

27.3 Discussion on any other item.