



R-1977  
16/4/12

**J 13012/74/2010-IA.II (T)**  
**Government of India**  
**Ministry of Environment & Forests**

Ph: 011-2436 3973  
Paryavaran Bhawan  
CGO Complex, Lodi Road  
New Delhi-110 003  
Dated: 3<sup>rd</sup> April, 2012

To

M/s Bokaro Power Supply Co. (P) Ltd.  
(A joint venture of SAIL & DVC)  
Hall No. : M-01, Old ADM Building,  
Ispat Bhawan, Bokaro Steel City- 827 001

**Sub: Expansion of existing Boiler Plant by installation of 9<sup>th</sup> Boiler of 300 TPH Coal Based High Pressure Boiler along with 36 MW Back Pressure Turbine Generator (BPTG) at Bokaro Steel Plant, in Chas Taluk, in Bokaro Distt., in Jharkhand - reg. Environmental Clearance.**

Sir,

The undersigned is directed to refer to your letters dated 13.06.2011, 19.11.2011 and 02.12.2011 on the subject mentioned above. The Ministry of Environment & Forests has examined the application.

2. It has been noted that the proposal is for expansion of existing Boiler Plant by installation of 9<sup>th</sup> Boiler of 300 TPH Coal Based High Pressure Boiler along with 36 MW Back Pressure Turbine Generator (BPTG) at Bokaro Steel Plant, in Chas Taluk, in Bokaro Distt., in Jharkhand. Land requirement will be 5.9 ha, which is within existing Power plant. The co-ordinates of the site are located in between Latitude 23°40'48"N to 23°41'26"N and Longitude 86°05'22" E to 86°06'00" E. The co-ordinates of the ash pond/dyke site are located in between Latitude 23°40'39"N to Longitude 86°06'44"E. Area requirement for ash pond/dyke will be 10,38,000 m<sup>2</sup>. Coal requirement will be 0.4161 MTPA. Ash and Sulphur content in Coal will be 36% and 0.44% respectively. About 0.1025 MTPA fly ash and 0.0256 MTPA of bottom ash respectively will be generated. Fly ash will be supplied to M/s Arpana Enterprises; M/s Unicorn Fly ash Bricks, M/s Shiv Shakti Fly Ash Products, M/s BSL, M/s SAIL, M/s Kamaladitya Construction Pvt. Ltd. Stack height will be 180 m. Water requirement will be 2582 m<sup>3</sup>/day and will be sourced from the existing cooling pond No. 1 of BSL through a pipeline at a distance of 100m from project site. Water linkage has been granted on 08.08.2010. There are no National Parks, Wildlife Sanctuaries, Heritage sites, tiger/Biosphere reserves etc. within 10 km of the site. Public Hearing was held on 24.07.2008. Cost of the project will be Rs 348.62 Crores.

3. The project has been considered in accordance with the provisions of the EIA notification issued by the Ministry of Environment & Forests vide S.O. 1533 (E), dated September 14, 2006.

4. Based on the information submitted by you, as at Para 2 above and others and presentation made before the Expert Appraisal Committee (Thermal Power) in its 38<sup>th</sup> Meeting held during December 12-13, 2011, by you and your consultant viz. M/s MECON Ltd., Ranchi, the Ministry of Environment and Forests hereby accords environmental clearance to the above project under the provisions of EIA notification dated September 14, 2006, subject to the compliance of the following Specific and General conditions:

**A. Specific Conditions:**

- (i) Scheme for implementation for harnessing solar power within the premises of the plant particularly at available roof tops shall be formulated and status of implementation shall be submitted to the Regional Office of the Ministry from time to time.
- (ii) A stack of 180 m height with flue gas velocity not less than 22 m/s shall be installed and provided with continuous online monitoring equipments for SO<sub>x</sub>, NO<sub>x</sub> and PM<sub>2.5</sub>& PM<sub>10</sub>. Mercury emissions from stack may also be monitored on periodic basis.
- (iii) Coal transportation to plant site shall be undertaken by rail and no road transportation shall be permitted.
- (iv) A detailed study on chemical composition of coal used particularly heavy metal and radio activity contents shall be carried out through a reputed institute and report shall be submitted to Regional Office of the Ministry. Only after ascertaining its radioactive level shall fly ash be supplied to end user.
- (v) The project proponent shall carry out a long term R&D on Boiler efficiency vis-à-vis large variation on ash content of coal and submit its findings to the Ministry at a later stage.
- (vi) High Efficiency Electrostatic Precipitators (ESPs) shall be installed to ensure that particulate emission does not exceed 50 mg/Nm<sup>3</sup>.
- (vii) Adequate dust extraction system such as cyclones/ bag filters and water spray system in dusty areas such as in coal handling and ash handling points, transfer areas and other vulnerable dusty areas shall be provided.
- (viii) Utilisation of 100% Fly Ash generated shall be made from 4<sup>th</sup> year of operation as per the Fly Ash Utilization, Notification, 1999 and its



subsequent amendmetns. Status of implementation shall be reported to the Regional Office of the Ministry from time to time.

- (ix) Fly ash shall be collected in dry form and storage facility (silos) shall be provided. Unutilized fly ash shall be disposed off in the ash pond in the form of slurry form. Mercury and other heavy metals (As, Hg, Cr, Pb etc.) will be monitored in the bottom ash as also in the effluents emanating from the existing ash pond. No ash shall be disposed off in low lying area.
- (x) Land and Water requirement shall be restricted as per latest CEA norms issued.
- (xi) Ash pond water shall be re-circulated and utilized.
- (xii) Ash pond shall be lined with HDP/LDPE lining or any other suitable impermeable media such that no leachate takes place at any point of time. Adequate safety measures shall also be implemented to protect the ash dyke from getting breached.
- (xiii) Sulphur and ash contents in the coal to be used in the project shall not exceed 0.5 % and <34 % respectively at any given time. In case of variation of coal quality at any point of time fresh reference shall be made to the Ministry for suitable amendments to environmental clearance condition wherever necessary.
- (xiv) Hydrogeology of the area shall be reviewed annually from an institute/ organization of repute to assess impact of surface water and ground regime (especially around ash dyke). In case any deterioration is observed specific mitigation measures shall be undertaken and reports/ data of water quality monitored regularly and maintained shall be submitted to the Regional Office of the Ministry.
- (xv) No ground water shall be extracted for use in operation of the power plant even in lean season.
- (xvi) No water bodies (including natural drainage system) in the area shall be disturbed due to activities associated with the setting up / operation of the power plant.
- (xvii) Minimum required environmental flow suggested by the Competent Authority of the State Govt. shall be maintained in the Channel/ Rivers (as applicable) even in lean season.
- (xviii) COC of 5.0 shall be adopted.
- (xix) Regular monitoring of ground water level shall be carried out by establishing a network of existing wells and constructing new

piezometers. Monitoring around the ash pond area shall be carried out particularly for heavy metals (Hg, Cr, As, Pb) and records maintained and submitted to the Regional Office of this Ministry. The data so obtained should be compared with the baseline data so as to ensure that the ground water quality is not adversely affected due to the project.

- (xx) Monitoring surface water quality in the area shall also be regularly conducted and records maintained. The monitored data shall be submitted to the Ministry regularly. Further, monitoring points shall be located between the plant and drainage in the direction of flow of ground water and records maintained. Monitoring for heavy metals in ground water shall be undertaken.
- (xxi) Waste water generated from the plant shall be treated before discharge to comply limits prescribed by the SPCB/CPCB.
- (xxii) The project proponent shall undertake rain water harvesting measures and shall develop water storage for use in operation of the plant. Rain water harvesting system shall be put in place which shall comprise of rain water collection from the built up and open area in the plant premises. Action plan for implementation shall be submitted to the Regional Office of the Ministry.
- (xxiii) Additional soil for leveling of the proposed site shall be generated within the sites (to the extent possible) so that natural drainage system of the area is protected and improved.
- (xxiv) Atleast three nearest village shall be adopted and basic amenities like development of roads, drinking water supply, primary health centre, primary school etc shall be developed in co-ordination with the district administration.
- (xxv) CSR schemes should address Public Hearing issues and shall be undertaken based on need assessment in and around the villages within 5 km of the site and in constant consultation with the village Panchayat and the District Administration. As part of CSR employment of local youth after imparting relevant training, as may be necessary, shall be undertaken as committed.
- (xxvi) An amount of Rs 1.40 Crores shall be earmarked as one time capital cost for CSR programme as committed by the project proponent. Subsequently a recurring expenditure of Rs 0.30 Crores per annum till the life of the plant shall be earmarked as recurring expenditure for CSR activities. Details of the activities to be undertaken shall be submitted within six month along with road map for implementation.



- (xxvii) It shall be ensured that an in-built monitoring mechanism for the CSR schemes identified is in place and annual social audit shall be got done from the nearest government institute of repute in the region. The project proponent shall also submit the status of implementation of the scheme from time to time. The achievements should be put on company's website.
- (xxviii) Green Belt consisting of 3 tiers of plantations of native species around plant comprising of 33% of plant area shall be raised (except in areas not feasible). The density of trees shall not less than 2500 per ha with survival rate not less than 80 %.
- (xxix) An Environmental Cell shall be created at the project site itself and shall be headed by an officer of appropriate seniority and qualification. It shall be ensured that the head of the Cell shall directly report to the Head of the Organization.

**B. General Conditions:**

- (i) The treated effluents conforming to the prescribed standards only shall be re-circulated and reused within the plant. Arrangements shall be made that effluents and storm water do not get mixed.
- (ii) A sewage treatment plant shall be provided (as applicable) and the treated sewage shall be used for raising greenbelt/plantation.
- (iii) Adequate safety measures shall be provided in the plant area to check/minimize spontaneous fires in coal yard, especially during summer season. Copy of these measures with full details along with location plant layout shall be submitted to the Ministry as well as to the Regional Office of the Ministry.
- (iv) Storage facilities for auxiliary liquid fuel such as LDO/ HFO/LSHS shall be made in the plant area in consultation with Department of Explosives, Nagpur. Sulphur content in the liquid fuel will not exceed 0.5%. Disaster Management Plan shall be prepared to meet any eventuality in case of an accident taking place due to storage of oil.
- (v) First Aid and sanitation arrangements shall be made for the drivers and other contract workers during construction phase.
- (vi) Noise levels emanating from turbines shall be so controlled such that the noise in the work zone shall be limited to 85 dB(A) from source. For people working in the high noise area, requisite personal protective equipment like earplugs/ear muffs etc. shall be provided. Workers engaged in noisy areas such as turbine area, air compressors etc shall be periodically examined to maintain audiometric record and for treatment for any hearing loss including shifting to non noisy/less noisy areas.

- (vii) Regular monitoring of ambient air ground level concentration of SO<sub>2</sub>, NO<sub>x</sub>, PM<sub>2.5</sub>& PM<sub>10</sub> and Hg shall be carried out in the impact zone and records maintained. If at any stage these levels are found to exceed the prescribed limits, necessary control measures shall be provided immediately. The location of the monitoring stations and frequency of monitoring shall be decided in consultation with SPCB. Periodic reports shall be submitted to the Regional Office of this Ministry. The data shall also be put on the website of the company.
- (viii) Provision shall be made for the housing of construction labour (as applicable) within the site with all necessary infrastructure and facilities such as fuel for cooking, mobile toilets, mobile STP, safe drinking water, medical health care, crèche etc. The housing may be in the form of temporary structures to be removed after the completion of the project.
- (ix) The project proponent shall advertise in at least two local newspapers widely circulated in the region around the project, one of which shall be in the vernacular language of the locality concerned within seven days from the date of this clearance letter, informing that the project has been accorded environmental clearance and copies of clearance letter are available with the State Pollution Control Board/Committee and may also be seen at Website of the Ministry of Environment and Forests at <http://envfor.nic.in>.
- (x) A copy of the clearance letter shall be sent by the proponent to concerned Panchayat, Zila Parisad / Municipal Corporation, urban local Body and the Local NGO, if any, from whom suggestions/representations, if any, received while processing the proposal. The clearance letter shall also be put on the website of the Company by the proponent.
- (xi) The proponent shall upload the status of compliance of the stipulated environmental clearance conditions, including results of monitored data on their website and shall update the same periodically. It shall simultaneously be sent to the Regional Office of MOEF, the respective Zonal Office of CPCB and the SPCB. The criteria pollutant levels namely; SPM, RSPM (PM<sub>2.5</sub>& PM<sub>10</sub>), SO<sub>2</sub>, NO<sub>x</sub> (ambient levels as well as stack emissions) shall be displayed at a convenient location near the main gate of the company in the public domain.
- (xii) The environment statement for each financial year ending 31<sup>st</sup> March in Form-V as is mandated to be submitted by the project proponent to the concerned State Pollution Control Board as prescribed under the Environment (Protection) Rules, 1986, as amended subsequently, shall also be put on the website of the company along with the status of compliance of environmental clearance conditions and shall also be sent to the respective Regional Offices of the Ministry by e-mail.



- (xiii) The project proponent shall submit six monthly reports on the status of the implementation of the stipulated environmental safeguards to the Ministry of Environment and Forests, its Regional Office, Central Pollution Control Board and State Pollution Control Board. The project proponent shall upload the status of compliance of the environment of the environmental clearance conditions on their website and update the same periodically and simultaneously send the same by e-mail to the Regional Office, Ministry of Environment and Forests.
- (xiv) Regional Office of the Ministry of Environment & Forests will monitor the implementation of the stipulated conditions. A complete set of documents including Environmental Impact Assessment Report and Environment Management Plan along with the additional information submitted from time to time shall be forwarded to the Regional Office for their use during monitoring. Project proponent will up-load the compliance status in their website and up-date the same from time to time at least six monthly basis. Criteria pollutants levels including NO<sub>x</sub> (from stack & ambient air) shall be displayed at the main gate of the power plant.
- (xv) Separate funds shall be allocated for implementation of environmental protection measures along with item-wise break-up. These cost shall be included as part of the project cost. The funds earmarked for the environment protection measures shall not be diverted for other purposes and year-wise expenditure should be reported to the Ministry.
- (xvi) The project authorities shall inform the Regional Office as well as the Ministry regarding the date of financial closure and final approval of the project by the concerned authorities and the dates of start of land development work and commissioning of plant.
- (xvii) Full cooperation shall be extended to the Scientists/Officers from the Ministry / Regional Office of the Ministry / CPCB/ SPCB who would be monitoring the compliance of environmental status.

5. The Ministry of Environment and Forests reserves the right to revoke the clearance if conditions stipulated are not implemented to the satisfaction of the Ministry. The Ministry may also impose additional environmental conditions or modify the existing ones, if necessary.

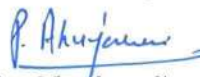
6. The environmental clearance accorded shall be valid for a period of 5 years to start operations by the power plant.

7. Concealing factual data or submission of false/fabricated data and failure to comply with any of the conditions mentioned above may result in withdrawal of this clearance and attract action under the provisions of Environment (Protection) Act, 1986.

8. In case of any deviation or alteration in the project proposed including coal transportation system from those submitted to this Ministry for clearance, a fresh reference should be made to the Ministry to assess the adequacy of the condition(s) imposed and to add additional environmental protection measures required, if any.

9. The above stipulations would be enforced among others under the Water (Prevention and Control of Pollution) Act, 1974, the Air (Prevention and Control of Pollution) Act, 1981, the Environment (Protection) Act, 1986 and rules there under, Hazardous Wastes (Management, Handling & Transboundary Movement) Rules, 2008 and its amendments, the Public Liability Insurance Act, 1991 and its amendments.

Yours faithfully,

  
(Dr. P.L. Ahujarai)  
Scientist 'F'

Copy to:

1. The Secretary, Ministry of Power, Shram Shakti Bhawan, Rafi Marg, New Delhi 110001.
2. The Secretary (Environment), Forests and Environment Department Government of Jharkhand.
3. The Chairman, Central Electricity Authority, Sewa Bhawan, R.K. Puram, New Delhi-110066.
4. The Chairman, Jharkhand Pollution Control Board, TA Building, HEC Complex, P.O. Dhurwa, Distt. Ranchi- with a request to display a copy of the clearance letter at the Regional Office, District Industries Centre and Collector's office for 30 days.
5. The Chairman, Central Pollution Control Board, Parivesh Bhawan, CBD-cum-Office Complex, East Arjun Nagar, Delhi-110032.
6. The Chief Conservator of Forests, Eastern Regional Office, Ministry of Environment & Forests, A/3, Chandersekharapur, Bhubaneswar-751023.
7. The District Collector, Bokaro District, Govt. of Jharkhand.
8. Guard file.
9. Monitoring file.

  
(Dr. P.L. Ahujarai)  
Scientist 'F'



## BOKARO POWER SUPPLY COMPANY (P) LIMITED COMPLIANCE REPORT

Ref: MOEF, New Delhi Environment Clearance F.No. J 13012/74/2010-IA II (T) dated 03<sup>rd</sup>. April, 2012.

STIPULATED CONDITION	COMPLIANCE STATUS
(i) Scheme for implementation for harnessing solar power within the premises of the plant particularly at available roof tops shall be formulated and status of implementation shall be submitted to the Regional Office of the Ministry from time to time.	2x50 KW of Solar Power on the roof-top of its two office buildings are commissioned (In Welfare Building -1 & Welfare Building-2) this year (2016) and are in continuous service. 02 MW solar power on rooftop of BSL buildings such as Hospital buiding, Administrative building, Bokaro Niwas etc is in progress and commissioning of 01 MW solar power has been completed till date. <b>COMPLIED.</b>
(ii) A stack of 180 m height with flue gas velocity not less than 22 m/s shall be installed and provided with continuous online monitoring equipments for SO <sub>x</sub> , NO <sub>x</sub> and PM <sub>2.5</sub> & PM <sub>10</sub> . Mercury emissions from stack may also be monitored on periodic basis.	A stack of height 180m is constructed and is under operation with online monitoring system of SOX, NOX and particulate matter which are functional. <b>COMPLIED.</b>
(iii) Coal transportation to plant site shall be undertaken by rail and no road transportation shall be permitted.	Coal is being transported by Indian railways and unloaded through wagon tippler. No. road transportation of coal is involved. <b>COMPLIED</b>
(iv) A detailed study on chemical composition of coal used particularly heavy metal and radio activity contents shall be carried out through a reputed institute and report shall be submitted to Regional Office of the ministry. Only after ascertaining its radioactive level shall fly ash be supplied to end user.	Analysis has been carried out by M/s. SGS India Private Ltd and the report is being submitted. <b>COMPLIED</b>
(v) The project proponent shall carry out a long term R&D on Boiler efficiency vis-à-vis large variation on ash content of coal and submit its findings to the Ministry at a large.	<b>To be done</b>
(vi) High Efficiency Electrostatic Precipitators (ESPs) shall be installed to ensure that particulate emission dose not exceeds 50mgNm <sup>3</sup> .	High efficiency ESP is operational with the steam generating unit and the emission of particulate matter is maintained within the prescribed norm of 50mg/Nm <sup>3</sup> . <b>COMPLIED</b>
(vii) Adequate dust extraction system such as cyclones/ bag filters and water spray system such as in coal handling and ash handling points, transfer areas and other vulnerable dusty areas shall be provided.	Water spray system in coal yard and ash pond area is in service. Besides it, dry fog dust suppression system is also installed in coal handling plant. <b>COMPLIED</b>



**BOKARO POWER SUPPLY COMPANY (P) LIMITED**  
**COMPLIANCE REPORT**

Ref: MOEF, New Delhi Environment Clearance F.No. J 13012/74/2010-IA II (T) dated 03<sup>rd</sup>. April, 2012.

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| <p>(viii) Utilization of 100% Fly Ash generated shall be made from 4<sup>th</sup> year of operation as per the fly Ash Utilization, Notification, 1999 and its subsequent amendments, Status of implementation shall be reported to the Regional Office of the Ministry from time to time.</p> | <ol style="list-style-type: none"><li>1. M/s. Dalmia cement is using fly ash from our boiler on regular basis for cement production. So far, 15,000 MT fly ash has been lifted by them.</li><li>2. About 60,000 Cum fly ash utilized in construction of NH-23 (Ramagarh-Chas section) by M/s. DilipBuildcon- contractor of NHAI.</li><li>3. Utilization of about 2 Lac cum Fly ash in construction of NH-32 (Chas-Dhanbad section) with M/s. Ashok Buildcon- contractor of NHAI is in progress. 70,000 MT ash has been transported to this project so far.</li><li>4. A connecting road is being constructed using pond ash and slag for easy approach.</li><li>5. A semi-automatic Ash brick manufacturing machine is installed inside plant premises this year to maximize ash utilization. A manual machine is already in operation. So far, more than one Lac ash brick given to BSL for their construction activities.</li><li>6. 02 nos Fly Ash Bagging Machine is installed inside plant premises for nuisance free transportation of Dry Fly Ash by Railway and highway to end users.</li><li>7. Clearance obtained from district mining authority and BSL for disposal of pond ash into abandoned stone quarries near Maheshpur village. NOC is already given for disposal of 20 L cum pond ash into quarries by JSPCB. The tender for work has been finalized and the work has started.</li><li>8. Expression of Interest has been floated for utilization for fly ash to cement and ash brick manufacturers and some parties have responded. Modalities for fly ash to be taken out from plant are being finalized through BSL.</li><li>9. Disposal for dry fly ash by Rail/road is in pipeline through e-auction and work will start soon. A railway siding has been developed inside plant for ease of loading of ash bags into railway wagons.</li></ol> |
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**BOKARO POWER SUPPLY COMPANY (P) LIMITED  
COMPLIANCE REPORT**

Ref: MOEF, New Delhi Environment Clearance F.No. J 13012/74/2010-IA II (T) dated 03<sup>rd</sup>. April, 2012.

(ix) Fly ash shall be collected in dry form and storage facility (Silos) shall be provided. Unutilized fly ash shall be disposed off in the ash pond in the form of slurry form. Mercury and other heavy metals (As, Hg, Cr, Pb, etc) will be monitored in the bottom ash as also in the effluents emanating from the existing ash pond. No ash shall be disposed off in low lying area.	Silo is installed and is functioning. 02 nos. Fly ash bagging machine has been installed for transportation through railway and roadway. Fly ash brick machine is also installed inside plant for use of dry fly ash. Unutilized fly ash is being transported through pipelines as slurry into the ash ponds and analysis being carried out by third party. <b>COMPLIED</b>
(x) Land and water requirement shall be restricted as per latest CEA norms issued.	Proper study had been carried out during the planning and commissioning by Bokaro Steel Plant and at the time of extension through an EIA and EMP report by Mecon Ltd. EIA and EMP report already submitted. <b>COMPLIED</b>
(xi) Ash pond water shall be re-circulated and utilized.	Ash pond water comes out into the BSL cooling pond from where it is recirculated for plant use. <b>COMPLIED</b>
(xii) Ash pond shall be lined with HDP/LDPE lining or any other suitable impermeable media such that no leachate takes place at any point of time. Adequate safety measures shall also be implemented to protect the ash dyke from getting breached.	Regular maintenance of ash dyke is being carried out with boulders and slag for its protection. Also height of the dyke is raised as per requirement <b>COMPLIED</b>
(xiii) Sulphur and ash contents in the coal to be used in the project shall not exceed 0.5% and <34 % respectively at any given time. In case of variation of coal quality at any point of time fresh reference shall be made to the Ministry for suitable amendments to environmental clearance condition wherever necessary.	Coal quality with respect to ash and volatility is regularly checked in plant lab and is within limit. Coal analysis report attached. <b>COMPLIED</b>
(xiv) Hydrogeology of the area shall be reviewed annually from an institute / organization of repute to assess impact of surface water and ground regime (especially around ash dyke). In case any deterioration is observed specific mitigation measures shall be undertaken and reports / date of water quality monitored regularly and maintained shall be submitted to the Regional Office of the Ministry.	The specific tests are being carried out by NABL approved vendor M/s. SGS India Private Limited regularly. <b>COMPLIED</b> Sample report attached.
(xv) No ground water shall be extracted for use in operation of the power plant even in lean season.	No ground water is extracted in power Plant area for any operational use.



**BOKARO POWER SUPPLY COMPANY (P) LIMITED  
COMPLIANCE REPORT**

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	<b><u>COMPLIED</u></b>
(xvi) No water bodies (including natural drainage system) in the area shall be disturbed due to activities associated with the setting up /operation of the power plant.	The project work is completed without affecting any of the water bodies of the area. <b><u>COMPLIED</u></b>
(xvii) Minimum required environmental flow suggested by the Competent Authority of the State Govt. shall be maintained in the Channel /Rivers (as applicable) even in lean season.	Already in place through BSL infrastructure <b><u>COMPLIED</u></b>
(xviii) COC (Cycles of Concentration) of 5.0 shall be adopted.	Cycles of Concentration is being maintained through Re-Circulation Pump House. <b><u>COMPLIED</u></b>
(xix) Regular monitoring of ground water level shall be carried out by establishing a network wells and constructing new piezometers. Monitoring around the ash pond area shall be carried out particularly for heavy metals (hg, Cr, As, Pb) and records maintained and submitted to the Regional Office of this Ministry. The data so obtained should be compared with the baseline data so as to ensure that the ground water quality is not adversely affected due to the project.	Done through M/s. <b>SGS India Private Limited</b> which is an approved lab of NABL. <b><u>COMPLIED</u></b> Sample report attached.
(xx) Monitoring surface water quality in the area shall also be regularly conducted and records maintained. The monitored data shall be submitted to the Ministry regularly. Further, monitoring points shall be located between the plant and drainage in the direction of flow of ground water shall be undertaken.	Necessary water test and analysis is done through M/s. <b>SGS India Private Limited</b> <b><u>COMPLIED</u></b>
(xxi) Waste water generated from the plant shall be treated before discharge to comply limits prescribed by the SPCB / CPCB.	Water is treated before discharge and an online effluent analysis system is installed for regular monitoring. <b><u>COMPLIED</u></b>
(xxii) The project proponent shall undertake rain water harvesting measures and shall develop water storage for use in operation of the plant. Rain water harvesting system shall be put in place which shall comprise of rain water collection from the built up and open area in the plant premises, Action plan for implementation shall be submitted to the Regional Office of the Ministry.	Rain water harvesting is done through different drain channels network connected to water Reservoir of SAIL/BSL known as cooling ponds of BSL. <b><u>COMPLIED.</u></b>
(xxiii) Additional soil for leveling of the proposed site shall be generated within the sites (to the extent possible) so that natural drainage system of the area is protected and improved.	All efforts have been made for an effective natural drainage system and there is no accumulation of water inside plant premises. <b><u>COMPLIED</u></b>





## BOKARO POWER SUPPLY COMPANY (P) LIMITED COMPLIANCE REPORT

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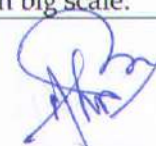
<p>(xxiv) At least three nearest village shall be adopted and basic amenities like development of roads, drinking water supply, primary health centre, primary school etc shall be developed in co-ordination with the district administration.</p>	<p>a) An LOI has been awarded for Rs. 41,86,740/- for construction of Pucca Road connecting two nearby villages i.e. Bhatua and Chopan under CSR activities.</p> <p>b) Building repair/Toilet construction and play ground development of two schools at chaura&amp;asansol village is under proposal at an cost of approx 14 Lakhs</p> <p>c) Mobile medical unit has been started in collaboration with PSMRI for nearby village costing approx 12 Lakhs</p> <p>d) Supply &amp; installation of 24 nos of Solar Street Lights in the peripheral villages of Bokaro was completed in Jan'18.</p> <p>e) Construction of Toilet blocks in UPG Rajkriyakrit School, Assansol (Chas) through M/s Sulabh International was commenced in Sep,17 and completed in March,18.</p> <p style="text-align: center;"><b>COMPLIED.</b></p>
<p>(xxv) CSR schemes should address public hearing issues and shall be undertaken based on need assessment in and around the village's within 5 km of the site and in constant consultation with the village Panchyat and the District Administration. As part of CSR employment of local youth after imparting relevant training, as may be necessary, shall be undertaken as committed.</p>	<p>a) A Sum of Rs. 70,000 was spent through Bharat VikasParishad, an NGO for providing artificial limbs the disabled persons belonging to nearby villages. These limbs were distributed to the disables on 10 Feb 2012 and 23 March 2013.</p> <p>b) Rs. 4 lakhs has been given to M/s Bharat VikasParishad for procurement of artificial limbs</p> <p>c) Sponsorship of 5 girl for skill development through Private ITI for Rs. 2 lacks</p> <p>d) \BPSCL shall be supporting education of children with disability by bearing cost towards annual fee of 50 students of Asha-Lata ViklangVikas Kendra, B.S.City.</p> <p>e) A detailed work and expenditure has been uploaded on our website; <a href="http://www.bpscl.com">www.bpscl.com</a>.</p> <p style="text-align: center;"><b>COMPLIED.</b></p>
<p>(xxvi) An amount of Rs 1.40 Crores shall be earmarked as one time capital cost for CSR program as committed by the project proponent. Subsequently a recurring expenditure of Rs 0.30 Crores per annum till the life of the planet shall be earmarked as recurring expenditure for CSR activities. Details of the activities to be undertaken shall be submitted within six month along</p>	<p>a) Rs. 41,86,740/- for construction of Pucca Road connecting two nearby villages i.e. Bhatua and Chopan under CSR activities has started and we will continue further with viable projects.</p> <p>b) Rs. 35 lac has been contributed to PM national relief fund.</p>



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<p>with road map for implementation.</p>	<p>c) 115 Tracksuits have been distributed to players participating in PVKM sponsored for.</p> <p>d) Supplying and installing 50 nos of seating chair units (3 seater) in Bokaro General Hospital for Patients visiting the Hospital under National Health Program.</p> <p>e) An Agreement has been signed with Eureka Forbes Institute of Environment (EFIE) on 20.03.2017 for Project JAL AMRIT - installation of 05 Nos. Water ATMs at Bokaro Civil Courts (03), &amp; Bokaro City College (02). The material has already been delivered and installation is expected to be completed within two days</p> <p>f) Financial Assistance of Rs. 19.66 Lakhs was given to JREDA for installation of a 30 KV Solar Power Plant with underground cabling connected to 150 Nos. LED -based solar street lights within 3Kms of Chandankiyari Chowk, in Chandankiyari.</p> <p>g) Swasthya Kiran project, under which a Mobile Medical Unit (MMU) is operating successfully 5-Days a week in peripheral villages and 04 Special Medical Camps have been organized in the current Financial Year.</p> <p>h) "Gift Milk" scheme to address the issue of Malnutrition for one year under which 2000 Government school students are receiving 200 ml flavoured milk pouches was launched in association with NDDDB Foundation for Nutrition on 1st February'2018.</p> <p><b>COMPLIED.</b></p>
<p>(xxvii) It shall be insured that an in-built monitoring mechanism for the CSR schemes identified is in place and annual social audit shall be got done for the nearest government institute of repute in the region. The project proponent shall also submit the status of implementation of the scheme from time to time. The achievements should be put on company's website.</p>	<p>A CSR team has been constituted for identification, implementation and monitoring of CSR Scheme. Order copy of same is enclosed herewith as annexure- The achievements have been put on company's website- <a href="http://www.bpscl.com">www.bpscl.com</a></p> <p><b>COMPLIED.</b></p>
<p>(xxviii) Green Belt consisting of 3 tiers of plantations of native species around planet comprising of 33% of planet area shall be raised (except in areas not</p>	<p>1. Eco-friendly garden has been developed inside plant premises. Plantation works has been done on big scale.</p>





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<p>feasible). The density of trees shall not less than 2500 per ha with survival rate not less than 80%.</p>	<ol style="list-style-type: none"> <li>2. More than 15000 trees were planted in and around the plant area.</li> <li>3. The density of trees is more than 2500 and the survival rate is about 85%.</li> <li>4. 50 kg of grass seed (Estilo Hamata) planted in ash pond area for environment protection. Additionally, samplings of Kadam and bamboo trees are planted to develop the greenery. Regular plantation in and around peripheral areas are being carried out.</li> <li>5. 5000 tree saplings have been planted in ash pond and peripheral villages in this rainy season.</li> <li>6. Power Plant is committed to maintain an eco-friendly environment. It is a continuous process and plant is adhering to this principle.</li> </ol>
<p>(xxix) An Environmental Cell shall be created at the project site itself and shall be headed by an officer of appropriate seniority and qualification. It shall be ensured that the head of the Cell shall directly report to the Head of the Organization.</p>	<p>A proper environment cell has been created and working accordingly.</p>
<p>(i) The treated effluents conforming to the prescribed standards only shall be re-circulated and reused within the plant. Arrangements shall be made that effluents and storm water do not get mixed.</p>	<p>Effluent and storm water are linked to BSL system through separate channels and re-circulated for plant use through cooling ponds. <b>COMPLIED</b></p>
<p>(ii) A sewage treatment plant shall be provided. (As applicable) and the treated sewage shall be used for raising greenbelt / plantation.</p>	<p>Already in practice in our existing plant. <b>COMPLIED.</b></p>
<p>(iii) Adequate safety measures shall be provided in the plant area to check / minimize spontaneous fires in coal yard especially during summer season. Copy of these measures with full details along with location plant layout shall be submitted to the Ministry as well as to the Regional Office of the Ministry.</p>	<ol style="list-style-type: none"> <li>a) Sufficient number of Fire Hydrants in conveyer gallery as well as in yard area has been provided.</li> <li>b) Static water tank at the distance of 15 m from coal yard which act as a reservoir for firefighting purpose.</li> <li>c) Fire station also available within the plant premises of Bokaro Steel Plant under common sharing basis.</li> <li>d) Regular watering and water sprinkling have been done in summer season.</li> <li>e) 2 Nos Dry Fog Dust Separation systems have already been commissioned and working. One was in CHP package of</li> </ol>



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	unit#9 and other was separately installed for better environment. Documents are enclosed as annexure- <b><u>COMPLIED.</u></b>
(iv) Storage facilities for auxiliary fuel such as LDO / HFO /LSHS shall be made in the plant area in consultation with department of Explosives, Nagpur. Sulphur content in the liquid fuel will not exceed 0.5%. Disaster Management Plan shall be prepared to meet any eventuality in case of an accident taking place due to storage of oil.	Permission has obtained from Petroleum and Explosive safety Organization for Petroleum class C installation and disaster Management Plan has been prepared.A copy of the Disaster Management Plan and Details of analysis of liquid fuel are attached herewith as annexure- <b><u>COMPLIED.</u></b>
(v) First Aid and sanitation arrangements shall be made for the drivers and other contract workers during construction phase.	First Aid medical help, health Centre is available inside plant premises for all contract workers and employees. <b><u>COMPLIED.</u></b>
(vi) Noise levels emanating from turbines shall be so controlled such that the noise in the work zone shall be limited to 85 dB (A) from source. For people working in the high noise area, Requisite personal protective equipment like earplugs / ear muffs etc. shall be provided. Workers engaged in noisy areas such as turbine area, air compressor etc shall be periodically examined to maintain audiometric record and for treatment for any hearing loss including shifting to non noisy / less noisy areas.	Noise level at turbine hall, compressor room and other area is monitored regularly and protective equipments like ear plugs and muffs are made available for regular use. <b><u>COMPLIED.</u></b>
(vii) Regular monitoring of ambient air ground level concentration of SO <sub>2</sub> , NO <sub>x</sub> , PM <sub>2.5</sub> & PM <sub>10</sub> and Hg shall be carried out in the impact zone and records maintained. If any stage these levels are found to exceed the prescribed limits, necessary control measures shall be provided immediately. The location of the monitoring stations and frequency of monitoring shall be decided in consultation with SPCB. Periodic reports shall be submitted to the Regional office of this Ministry. The data shall also be put on the website of the company.	Regular monitoring of ambient air ground level concentration of SO <sub>2</sub> , NO <sub>x</sub> , PM <sub>2.5</sub> & PM <sub>10</sub> are being monitored and data is displayed at plant premises. Our plant is integral part of Bokaro Steel plant and its ambient air and Bokaro steel City are being displayed all data at factory main gate and township.The same is applicable to us as being in the same premises. The data have been putted on the website of the company <a href="http://www.bpscl.com">www.bpscl.com</a> <b><u>COMPLIED.</u></b>
(viii) Provision shall be made for the housing of construction labour (as applicable) within the site with all necessary infrastructure and facilities such as fuel for cooking, mobile toilets, mobile STP , safe drinking water, medical health care, crèche etc. The housing may be in the form of temporary structures to be removed after the completion of the project.	No such provisions were needed during the execution of project as the project site is near to township and all temporary structure are removed. <b><u>COMPLIED.</u></b>
(ix) The project proponent shall advertise in at least two local newspapers	The advertisements regarding environmental clearance





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<p>widely circulated in the region around the project, one of which shall be in the vernacular language of the locality concerned within seven days from the date of this clearance letter, informing that the project has been accorded environmental clearance and copies of clearance letter are available with the state Pollution control Board / Committee and may also be seen at website of the Ministry of Environment and forests at <a href="http://envfor.nic.in">http://envfor.nic.in</a>.</p>	<p>accorded for the projects are published in newspapers including local ones. <u>COMPLIED.</u></p>
<p>(x) A copy of the clearance letter shall be sent by the proponent to concerned Panchayat, Zilaparisad / Municipal Corporation, urban local Body and the Local NGO, if any, from whom suggestions / representations, if any, received while processing the proposal. The clearance letter shall also be put on the website of the Company by the proponent.</p>	<p>Public hearing was conducted for suggestion and representation of local bodies for environment clearance of the project. The Environment Clearance letter have been put on the website of the company <a href="http://www.bpscl.com">www.bpscl.com</a> <u>COMPLIED.</u></p>
<p>(xi) The proponent shall upload the status of compliance of the stipulated environmental clearance conditions, including results of monitored date on their website and shall update the same periodically. It shall simultaneously be sent to the Regional Office of MOEF, the respective Zonal Office of CPCB and the SPCB. The criteria pollutant levels namely; SPM, RSPM (PM<sub>2.5</sub>&amp; PM<sub>10</sub>), SO<sub>2</sub>, NO<sub>x</sub> (ambient levels as well as stack emissions) shall be displayed at a convenient location near the main gate of the company in the public domain.</p>	<p>Report of Pollutant parameters like SPM, SO<sub>2</sub>, NO<sub>x</sub> for ambient and stack are sent to MOEF regional office, JSPCB and SPCB. The SPM, RSPM (PM<sub>2.5</sub>&amp; PM<sub>10</sub>), SO<sub>2</sub>, NO<sub>x</sub> have been displayed at the main gate of the company in the public domain. <u>COMPLIED</u></p>
<p>(xii) The environment statement for each financial year ending 31<sup>st</sup> March in Form-V as is mandated to be submitted by the project proponent to the concerned State Pollution Control Board as prescribed under the environmental (Protection) Rules, 1986, as amended subsequently, shall also be put on the website of the company along with the status of compliance of environmental clearance conditions and shall also be sent to the respective Regional Offices of the Ministry by e-mail</p>	<p>Environment statement foreach financial year ending 31<sup>st</sup> March in Form-V is being sent to state Pollution Control Board and Regional offices of MOEF. <u>COMPLIED.</u></p>
<p>(xiii) The project proponent shall submit six monthly reports on the status of the implementation of the stipulated environmental safeguards to the Ministry of environment and Forests, its Regional Office, Central Pollution Control Board and State Pollution Control Board. The project proponent shall upload the stats of compliance of the environment of the environmental clearance conditions on their website and update the same periodically and simultaneously send the same by e-mail to the Regional Office, Ministry of</p>	<p>Reports are being sent to regional office and pollution board office regularly. <u>COMPLIED.</u></p>






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(xiv) Regional Office of the Ministry of environment & Forests will monitor the implementation of the stipulated conditions. A complete set of documents including Environmental Impact assessment Report and Environmental Management plan along with the additional information submitted from time to time shall be forwarded to the Regional Office for their use during monitoring. Project proponent will up-load the compliance status in their website and up-date the same from time to time at least six monthly basis. Criteria Pollutants levels including NOx (from stack & ambient air) shall be displayed at the main gate of the power plant.	Six monthly reports are being sent to the regional office of ministry with documents in support including EMP and EIA. Ambient Pollution parameters are displayed at factory main gate where the power plant is situated. <b>COMPLIED.</b>
(xv) Separate funds shall be allocated for implementations of environmental protection measures along with item wise break-up. These cost shall be included as part of the project cost. The funds earmarked for the environment protection measures shall not be diverted for other purposes and year-wise expenditure should be reported to the Ministry.	Separate budgetary allocation is being made for environment protection measures. <b>COMPLIED.</b>
(xvi) The project authorities shall inform the Regional Office as well as the Ministry regarding the date of financial closure and final approval of the project by the concerned authorities and the dates of start of land development work and commissioning of plant.	Plant already commissioned in Sept 2014. Financial closure is yet to be done. Regional office and ministry will be informed accordingly.
(xvii) Full cooperation shall be extended to the Scientists / Officers from the Ministry /Regional Office of the Ministry /CPCB/SPCB who would be monitoring the compliance of environmental status.	All sorts of cooperation to different agencies being extended at all times. Further Cooperation is assured as and when required for monitoring of compliance of environment status. <b>COMPLIED.</b>

  
 17/12/16  
 DGM/Environment