

26<sup>th</sup> May, 2020

To

The Director (S)  
 Eastern Regional Office,  
 Ministry of Environment and Forests & CC,  
 Government of India,  
 A/3, Chandrasekharpur,  
**Bhubaneswar - 751023**

Sub: **Compliance of Environment Clearance (EC) conditions for the period October'19 to March'20**

Ref.: EC No.: (i) J-11011/400/2006-IA II (I), dated 6<sup>th</sup> February 2008 &  
 J-11011/144/2006-IA II (I), dated 19 October 2009  
 (ii) J-11011/53/2004-IA.II (I), dated 14<sup>th</sup> July 2005  
 (iii) J-11011/42/2000-IA.II, dated 10<sup>th</sup> January 2001  
 (iv) J-13012/10/2004-IA.II (T), dated 21<sup>st</sup> September 2005  
 (v) J-13011/1/99-IA.II (T), dated 24<sup>th</sup> April 2005  
 (vi) J-13011/1/99-IA.II (T), dated 04<sup>th</sup> August 1999  
 (vii) J-13011/18/88 - IA, dated 11<sup>th</sup> May 1989

Dear Sir,

With reference to the above stated Environment Clearances (EC), accorded to our Aluminium Smelter & CPP at Hirakud in the district of Sambalpur, Odisha, please find enclosed herewith the six monthly compliances of the conditions laid down in the ECs for the period of October'19 to March'20, along with data on environment quality of both the plants.

The compliances have been sent through mail id: [roez.bsr-mef@ori.nic.in](mailto:roez.bsr-mef@ori.nic.in).

Thanking you.

Yours truly

**J. P. Nayak**  
 Head - Sambalpur Smelter

Encl: As above



## COMPLIANCE TO ENVIRONMENT CLEARANCE (EC) CONDITIONS

**Name of the Project** : EXPANSION OF SMELTER PLANT FROM 100 KTPA TO 360 KTPA AND CAPTIVE POWER PLANT FROM 267.5 MW TO 967.5 MW AT HIRAKUD

**Clearance No. & Date** : J - 11011/400/2006-IA II (I), dated: 6 February 2008, & Amendment Letter - J - 11011/144/2006-IA II (I), dated 19 October 2009

**Compliance Period** : October 2019 - March 2020

Sl. No	CONDITIONS	STATUS AS ON 31 <sup>st</sup> March 2020
2	<p>The Ministry of Environment and Forests has examined the proposal. It is noted that the proposal is for expansion of smelting capacity of Aluminium metal from the existing 1, 00,000 MTA (including 35,000 TPA capacity under trial) to 3, 60,000 TPA and Captive Power Plant capacity from 267.5 MW (including 100 MW under trial) to 967.5 MW at the Smelter Plant at Hirakud, Sambalpur, Orissa. The project cost is Rs.5195 Crores, out of which Rs.369 Crores has been earmarked for pollution control measures. This expansion will be undertaken in two phases. In Phase I, 46,000 MTA capacity will be added and in Phase II, the addition shall be of 2,14,000 MTA. Presently, HIL has 468 pots of Soderberge Technology and 164 of Pre-baked Anode Technology (632 pots of 1,00,000 MTA). During Phase-I, the capacity shall be increased to 1,46,000 MTA by changing all (468) Soderberg pots to pre-baked ones. Additional 14 pots will be shifted from Belgaum unit and shall also be converted into Pre-Baked. This will result in total of 646 pots of Pre-Baked technology having a capacity of 1,46,000 MTA. During phase II, 232 new Pre-Baked pots with 2,14,000 TPA capacity will be added. The unit has Captive Power Plant of 267.5 MW. 100 MW will be added in phase-I and 600 MW in phase-II, thereby making the final capacity as 967.5 MW. The power plant will be based on CFBC/PFC Boiler. Coal for CPP shall be procured from coal fields 20 km away and transported in covered Volvo trucks which will be later shifted to railway. Most of the other materials will also be transported by railways.</p>	<p>The capacity of the Smelter Plant has been increased from 100000 TPA to 146000 TPA in Phase - I. 468 pots based on Soderberg technology was converted to prebaked ones. In Phase - II the Smelter was expanded to 216000 TPA by adding 80 pots of capacity 70000 TPA. All pots used in the Smelter are based on prebaked technology.</p> <p>The CPP has been expanded from 267.5 MW to 467.5 MW by adding 100 MW in Phase - I and Phase - II each. Currently CPP is operating with installed capacity of 467.5 MW having configuration of 1 x 67.5 MW and 4 x 100 MW. The CPP is based on CFBC technology.</p> <p>Coal is procured from captive coal mine at Gare Palma in the state of Chhatisgarh and other coal mines inside the state of Odisha. It is transported from captive mine and other sources through railways as well as through tarpaulin covered trucks. For handling (unloading from wagons and loading in the trucks for transporting to the nearby coal yard), of coal procured through railways, a platform has been established in the premise of Power Plant.</p>



- 3 The Phase-I units will be accommodated within the existing 163.95 ha of land. For Phase-II units, additional 91 ha of land will be acquired. No R&R is involved in the project and no forest land is involved in the project. The site is about 8.5 km away from Sambalpur town. Hirakud reservoir on Mahanadi river is located 1.2 km away from the plant. Small size reserve forests (Laxmi dungri, Ram dungri and Jamraha) are located within 10 km radius of the plant. No ecologically sensitive zone exists within 10 km periphery of the project. The proposed Sambalpur Elephant Reserve falls outside 10 km radius of the plant site and the site does not fall in the elephant movement corridor.
- 4 The raw water requirement shall increase from 31,955 to 1,01,555 KLD, thereby increase for the expansion project will be 69,600 KLD which will be sourced from the Hirakud reservoir. 14,250 KLD of wastewater will be generated from the expansion project. Wastewater generation shall increase from 8278 KLD to 22,528 KLD thereby increase in waste water generation for the expansion project will be 14,250 KLD. This will be treated in Rotating Biological Contactor and reused within the plant. Cooling water blow down from the power plant will be treated to meet the discharge standards and discharged into Kharjhor nalla. 7650 TPA of solid waste generated from smelter will be disposed off as per CPCB guidelines, in secured landfill site inside the premises. 2.55 million TPA of coal ash generated from power plant will be disposed as dry ash mounds. Coal ash disposal as backfill material in abandoned coal mines has been explored.
- In Phase - I expansion, Smelter has increased its capacity from 1,00,000 TPA to 1,46,000 TPA and CPP from 267.5 MW to 367.5 MW.
- In Phase - II of Smelter Plant has added 70 KTPA, taking total capacity of the unit to 216 KTPA and CPP added 100 MW (Unit - V) increasing total capacity to 467.5MW.
- Both phases of expansions have been accommodated within the existing 163.95 ha of land. No R&R and forest land is involved in the project. No ecologically sensitive zone exists within 10 km periphery of the project.
- The raw water requirement is sourced from the Hirakud Reservoir. During the period Oct'19 to Mar'20, a total of 4067365 KL @22226.03 KLD of water has been drawn from the reservoir.
- For treatment of Smelter Plant effluent, three RO based ETPs (two of 250 KLD capacity and one of 50 KLD capacity) have been installed. For treatment of effluent from our Flat Rolled Product (FRP) unit, an ETP Integrated with RO of capacity 120 KLD has been installed.
- Five STPs (500 KLD, 2 x 100 KLD, 400 KLD, 300 KLD capacities) have been provided for treatment of sewage water from canteen, toilets & colony of three plants including FRP.
- Solid wastes generated from the Smelter Plant are disposed off to the registered and authorized agencies, TSDF and Secured Landfill site as per CPCB guidelines.
- Cooling tower blowdown from the power plant is treated in RO plant of capacity 120 m<sup>3</sup>/hr for reuse in process and cooling. Other effluents from the plant is treated to meet the standards for discharge, stored in the common monitoring basin and entirely reused in cooling towers and other in-house activities with no discharge to outside in dry seasons as per CTO.



Coal ash generated from the Power Plant is utilized in cement plants, brick manufacturing units, road making, low lying area filling etc. Balance ash, if any, is disposed dry at ash mound. 449842 MT of ash was generated with utilization of 429722 MT during the period October'19 to March'20.

#### A. SPECIFIC CONDITIONS :

- (i) As stated in the Public Hearing, the new expansion site shall be on the opposite side of the village. : The expansion site is on the opposite side of the village.
- (ii) The expansion shall be based only on Pre-baked Anode Technology and all Soderberge Technology based pots shall be converted to Pre-baked Anode Technology, as per the schedule submitted to the Ministry. The Captive Power Plant shall be based on CFBC/PFC Boiler. : Only prebake anode technology is being adopted in Aluminium Smelting process. All the Soderberg pots have already been converted to prebake one.  
All the boilers of 467.5 MW Power Plant are CFBC in nature.
- (iii) The gaseous emissions (SO<sub>2</sub>, NO<sub>x</sub>, CO, HC and Fluoride) and Particulate matter along with RSPM levels from various process units shall conform to the standards prescribed by the concerned authorities from time to time. The State Board may specify more stringent standards for the relevant parameters keeping in view of the nature of the industry and its size and location. At no time the emission level shall go beyond the prescribed standards. On-line continuous monitoring system for particulate emissions, SO<sub>2</sub> and NO<sub>x</sub> shall be provided and shall make necessary arrangements for submission of on-line real time emission data to CPCB website. Interlocking facility shall be provided between pollution control equipment and the process operation so that in the event of the pollution control equipment not working, the respective unit (s) is shut down automatically. In the event of failure of any pollution control system adopted by the unit, the respective unit should not be restarted until the control measures are rectified to achieve the desired efficiency. Low NO<sub>x</sub> burners shall be installed to control the NO<sub>x</sub> emissions. : The emission/discharge confirm to the standards prescribed by MoEF&CC, CPCB and OSPCB from time to time.

Particulate Matter and Fluoride from the Smelter through FTP out lets and fugitive fluoride from pot rooms is being monitored regularly. In CPP, environment friendly CFBC boilers have been provided to each unit, which are low NO<sub>x</sub> producing in nature for the technology of staged combustion in low temperature used in the boilers. ESPs, of efficiency 99.9%, fitted with High Frequency Rectifier Transformers (HFTRs) have been attached to each boiler of the CPP to maintain the Particulate Matter below the standard stipulated by MoEF&CC vide its notification dated 07<sup>th</sup> Dec 2015. Use of crushed lime stone in the bed of the boilers is in progress for reduction in generation of SO<sub>2</sub>, further below the stipulated standard.

Online real-time emission monitoring analyzers installed at all FTP stacks of Smelter. Forbes Marshall-Codel make Opacity Monitors (Model No: DCEM-2100) have been installed and commissioned in all the stacks of of CPP.



Further, online Continuous Flue gas Analyzers of SO<sub>2</sub>, NO<sub>x</sub> (Model No: GCEM 4000 of Codel make) have also been installed in all the stacks. Similarly in our FRP, 3 online PM analyzers have been provided in stacks of HRM & CRM. Real time data from the online monitors of Smelter, Power & FRP plant are submitted to SPCB/CPCB server and data transmission is continuous.

As the pollution control devices are attached to multiple process operations (pots in case of Smelter & boilers in case of CPP) and the operations are continuous one, interlocking facilities are not feasible. However we have installed alarm systems for any failure of pollution control system attached to the operations.

- (iv) Only 10 new stacks shall be installed for the expansion project - 4 in smelter plant, 4 in anode plant and 2 in casting unit. The scrubbed alumina from Alumina based dry scrubbing system shall be reused in process. Minimum stack height shall be 50 m. The minimum height of other stacks of anode plant and casting plant shall be 35 m, which shall base on Sulphur content of fuel. 3 new stacks in power plant shall be provided with ESP.
- : Fume Treatment Plants (FTPs) with dry scrubbing system have been installed in Smelter and the enriched alumina from the FTPs is being reused in the process. 5 Stacks of height 50m have been provided to all FTPs and 6 stacks of height 35 m (and above) have been provided to casting units and caster. No anode baking plant is exists inside the Smelting unit.

Stacks of height 130 m have been provided to each unit of CPP. ESPs of efficiency 99.9%, equipped with High Frequency Rectifier Transformers (HFTRs) have been provided to the boilers of the 467.5 MW CPP.

- (v) Total Fluoride emissions and pitch fumes from smelter and anode-baking unit shall be controlled using alumina based dry scrubbing system to limit Fluorides emissions within 0.8 kg/ton Aluminium produced and SPM within 50 mg/Nm<sup>3</sup>. SPM emissions from Captive Power Plant shall be less than 100 mg/NM<sup>3</sup>. Forage Fluoride levels of less than 80 ppm for one month, less than 60 ppm for two months and less than 40 ppm for 12 months shall be complied with. Further the pot emissions through fume treatment plant shall not exceed 0.30 kg/ton of Aluminium produced.
- : All the FTPs of the Smelter are based on alumina based dry scrubbers through which the total fluorid emission is controlled within the prescribed limit of CPCB/SPCB. Green anodes of our nearby sister concern Aditya Aluminium is used in our Smelting process. The particulate matter, fluoride emissions and forage fluoride in grass are being regularly monitored for the existing potlines and reported to SPCB and Ministry through half yearly compliance reports. All the processes of Smelter Plant and CPP are meeting stipulated norms of MoEF&CC/CPCB/SPCB.





- (vi) Regular monitoring of fluoride content in ambient air, forage fluoride and in ground water shall be carried out and data shall be submitted to State pollution Control Board. : Regular monitoring of fluoride in surface and ground water as well as forage fluoride, as an indicator of ambient air fluoride also is carried out and the data is submitted to State Pollution Control Board through monthly progress reports (Anexure-I).
- (vii) Raw material shall be stored in covered yards. Water sprinkling arrangement shall be made in the raw material stock yard to control fugitive emissions. Coal and other raw material shall be transported in covered trucks, containers etc., which shall later be shifted to covered rail wagons. : The coal for Power Plant is transported from various sources through railways & covered trucks and stored under sheds in the coal yard of Power plant where sprinkling is done through fixed sprinklers to prevent the fugitive emission. Fugitive dust in the area is also suppressed by water sprinkling through mobile water tankers. Transportation of coal through railway has been started from Feb-2018. Alumina for Smelter Plant is transported from captive Alumina Refinery at Raygada & Muri through railways and stored in dedicated silos.
- (viii) In plant control measures for checking fugitive emissions from all the vulnerable sources like spillage/raw materials/coal handlings etc. shall be provided. Further, specific measures like provision of dust extraction and suppression system consisting of water sprinkling, suction hoods, fans, cyclones, bag filters, ventury scrubber etc. shall be installed at material transfer points and other enclosed raw material handling areas. Centralized de-dusting system i.e. collection of fugitive emissions through suction hood shall be provided and subsequent treatment through bag filter or any other device and finally emitted through a stack of appropriately designed height, as prescribed above. : Fume Treatment Plant (FTPs) having bag filters have been provided for control of fugitive from Smelting process. Dust collection and suppression system have been provided at different dust generating sources of Smelter. For control of fugitive emission in CPP, central dedusting system with suction hoods and bag filters has been provided in the crusher houses of CHP. Dust suppression systems have also been provided in the railway siding, coal yard, ash silo area, ash transporting road and all other vulnerable areas of fugitive dust emission. Bag filter houses have been provided to crusher houses of CHP & ash silos. Ash is unloaded from the silos after moisturisation to prevent the fugitive dust emission. Frequent sprinkling in regular intervals is carried out on the ash and coal transportation roads.
- (ix) Fugitive Fluoride emissions from the Pot room shall not exceed 0.4 Kg/Ton of Aluminium produced. Fugitive emissions, especially in the work zone area, product and raw materials storage area etc. shall be regularly monitored and records be maintained. The emissions shall conform to the limits imposed by the State Pollution Control Boards / Central Pollution Control Board. : The fugitive fluoride emission from the pot rooms is remaining within 0.4 Kg/Ton of Aluminium produced, for strict adherence to the SOPs. Regular monitoring of fugitive emission in the work zones is being carried out and record maintained. The fluoride emission is being monitored regularly with reporting to State Pollution Control Board every month.



- (x) Windbreakers shall be installed to restrict fugitive dust : Boundary wall of sufficient height provided to Smelter, Power & FRP to restrict the fugitive dust. Extensive sprinkling, at potential source of generation, is being carried out through fixed and mobile sprinklers to contain the fugitive dust.
- (xi) The water requirement for the expansion project shall not exceed 69,600 KLD and shall be sourced from the Hirakud reservoir : The raw water for the all the three plants, i.e Smelter, Power and Flat Rolled Plant is being sourced from Hirakud reservoir. Total raw water withdrawal from the reservoir for the period is 4067365 KL @22226.03 KLD.
- (xii) Waste water generation shall not exceed 14,250 KLD for the expansion project. Waste water generated from smelter shall be treated in Rotating Biological Contactor and shall be reused in the plant. Cooling water blowdown from the power plant shall be treated up to discharge standards and discharged into Kharjhor nalla. : The waste water generation from all the units is remaining below 14250 KLD.  
Waste water generated from Smelter is being treated in three effluent treatment plants (ETPs) of capacity 250KLD, 250KLD and 50KLD and reused back in cooling towers. The earlier existing Rotating Biological Contractor (RBC) has been replaced with RO based 250 KLD ETP. The cooling tower blow-down water of CPP is being treated through RO Plant and reused for cooling. Other effluents are being treated to meet the standards before reuse in various in-house activities and cooling towers. No waste water is discharged to outside, especially in dry seasons as per the CTO of SPCB.  
Waste water generated from FRP Plant is being treated at ETP Integrated with RO Capacity of 120 KLD.  
The domestic waste water of three plants is treated in STPs of capacities 500KLD, 400KLD, 300KLD & 2 x 100KLD. The treated water of these STPs is reused inside plants.  
Monitoring of water quality is being carried out regularly and the same for the period Oct'19 to Mar' 20 is enclosed.
- (xiii) 7650 TPA of solid waste generated, mainly the spent pot lining from smelter shall be disposed off in a secured landfill site inside the premises. The SLF shall be as per CPCB guidelines. 2.55 million TPA of coal ash generated from power plant shall be disposed as dry ash mounds. However, it shall be ultimately disposed off as backfill material in abandoned coal mines or shall be utilized as per : The carbon content of spent pot lining is disposed to authorized agency and the non-carbon (refractory) content is stored in close roof sheds with concrete platform. The aluminium dross generated in the process of Smelter is reprocessed inside the plant and also disposed to authorized vendors for reprocessing. The used anode butts are being



the Fly Ash Notification 5.0.763 (E) dated 14.9.1999 of this Ministry. The proposed Amendment / revision to this Notification shall be applicable for compliance from the Project Authority

sent to nearby sister concern Aditya Aluminium for conversion to green anode which is again used in our plant. Other solid wastes from Smelter Plant, which are hazardous in nature, are disposed at the TSDF and registered recyclers/reprocessors. The captive SLF, designed as per the CPCB guideline, is used especially for disposal of wastes in emergency.

Coal ash, the solid waste generated from the process of CPP, after utilization in different applications (supply to manufacturers of cement, ash bricks and low lying area filling, road making etc), is disposed off dry in ash mound, if any. During the period Oct 2019 to March 2020, about 449842 MT of ash (from all the units of Power Plant) have been generated and about 429722 MT of ash utilized with an average utilization figure of 95.7 %.The ash generation and utilization is enclosed.

After de-allocation of captive coal mine at Talabira of Sambalpur district in Odisha, disposal in the abandoned pits of other coal mines is being explored.

- (xiv) Minimum Cycle of Concentration (COC) for the CPP shall be 5.0 : To minimize the fresh water use, COC is being maintained more than 5.0 in all the operating units of CPP. For the period October 19 to March 20 the average COC for all units of CPP was 5.02.
- (xv) Minimum of 33 % of total land area shall be developed as green belt with local species in consultation and as per the CPCB's guidelines : 33% of total land area including solid waste disposal sites has been green covered. The details of plantation are enclosed.
- (xvi) All the recommendations made in the Charter on Corporate Responsibility for Environment Protection (CREP) for the Aluminium Sector shall be strictly implemented. : All the recommendations of Charter of Corporate Responsibility for Environment for aluminium sector are being strictly implemented.
- (xvii) The project authorities shall earmark Rs.369 crores to implement the conditions stipulated by the Ministry of Environment and Forests as well as the State Government along with the implementation schedule for all the conditions stipulated herein. The funds so provided shall not be diverted for any other purpose. : Being complied.





## B. GENERAL CONDITIONS :

- (i) The project authorities shall strictly adhere to the stipulations made by the State Pollution Control Board : We are adhering to the directions of State Pollution Control Board.
- (ii) No further expansion or modifications in the plant shall be carried out without prior approval of the Ministry of Environment and Forests. In case of deviations or alterations in the project proposal from those submitted to this Ministry for clearance, a fresh reference shall be made to the Ministry to assess the adequacy of conditions imposed and to add additional environmental protection measures required, if any. : No further expansion or modifications in the plant shall be carried out without prior approval of MoEF&CC.
- (iii) Regular monitoring of ambient air for SPM, RSPM, SO<sub>2</sub>, NO<sub>x</sub>, CO, HC and Fluoride shall be carried out as per CPCB guidelines. The locations of ambient air quality monitoring stations shall be reviewed in consultation with the State Pollution Control Board (SPCB) and additional stations shall be installed, if required, in the downwind direction as well as where maximum ground level concentrations are anticipated : The ambient air quality parameters are being monitored at seven locations of Smelter and eight locations in core & buffer zones of CPP regularly.  
  
For the online realtime monitoring of ambient air quality 2 stations installed inside Smelter premise and 3 inside CPP premise. The real time data is being transmitted to servers of SPCB & CPCB continuously.
- (iv) Data on ambient air quality, fugitive emissions and stack emissions should be regularly submitted to the concerned Regional Office of this Ministry and SPCB/CPCB every six months and posted on the Website of the Project Authority : Data on ambient air quality, fugitive emissions, stack emissions and water effluent quality is being regularly submitted to Eastern Regional Office through six monthly compliance reports. The data for the period October 2019 to March 2020 are enclosed. The six monthly compliance report is posted in company's website.
- (v) Industrial waste water shall be properly collected and treated so as to conform to the standards prescribed under GSR422 (E) dated 19<sup>th</sup> May 1993 and 3<sup>rd</sup> December, 1993 or as amended from time to time : Waste water is properly collected, treated to conform to the standards and entirely reused in various processes. Data on water effluent quality is enclosed for kind reference.
- (vi) The project authorities shall strictly comply with the rules and guidelines under Manufacture, Storage and Import of Hazardous Chemicals Rules, 1989 as amended in October, 1994 and January, 2000 and : Authorization for Management and Handling of Hazardous Waste has been obtained from State Pollution Control Board for Smelter, CPP and FRP. Conditions



1989, as amended from time to time. Authorization from the SPCB shall be obtained for collection, treatment, storage, and disposal of hazardous wastes. All Transportation of Hazardous Chemicals shall be as per the MVA, 1989

strictly followed as per Hazardous Waste (Management, Handling and Transboundary Movement) Rule 2016 and its amendments time to time.

- (vii) The overall noise levels in and around the plant area shall be kept well within the standards by providing noise control measures including acoustic hoods, silencers, enclosures etc. on all sources of noise generation. The ambient noise levels shall conform to the standards prescribed under Environment (Protection) Act, 1986 Rules, 1989 viz. 75 dBA (day time) and 70 dBA (night time) : Overall noise level is kept within standards by providing adequate noise control measures, wherever practicable. High noise areas have been provided with visual displays for use of PPEs.
- Noise quality in and around the plants is being monitored regularly. These are confirming to the standards prescribed under Environment (Protection) Act, 1986.
- The noise level data for the period October 2019 to March 2020 is enclosed for reference.
- (viii) Occupational health surveillance of the workers shall be carried out on a regular basis and records shall be maintained as per the Factories Act. : Occupational health surveillance of all the employees is being carried out on a regular basis and records are maintained.
- (ix) Training shall be imparted to all employees on safety and health aspects of chemicals handling. Pre-employment and routine periodical medical examinations for all employees shall be undertaken on regular basis : Regular training is being imparted to all the employees on various safety, health and environmental issues.
- Pre-employment and routine periodical medical examinations for all employees are being undertaken on regular basis.
- For the period October 2019 to March 2020 the health surveillance statistics are as follows:
- Pre-employment health surveillance against new recruitment- 38
- Periodic medical health surveillance for permanent employees- 1064
- Periodic medical health surveillance for contractual employees- 4691
- (x) Usage of PPEs by all employees/ workers shall be ensured : Use of PPEs by all the employees and workers are being strictly ensured in unit.

- (xi) The Company shall harvest surface as well as rainwater from the rooftops of the buildings proposed in the expansion project and storm water drains to recharge the ground water and use the same water for the various activities of the project to conserve fresh water : Studies by the Dept. of Civil Engineering, A.U College of Engineering, Andhra University, Visakhapatnam in 2007 and M/S Visiontek Services Pvt. Ltd, Bhubaneswar in 2012, recommend not to adopt rain water harvesting in Hirakud area for:
- (i) Presence of shallow water table
  - (ii) Hard rock at shallow depth
  - (iii) Water logging in the area and
  - (iv) Rising trend of the water table in the area
- (xii) The project proponent shall also comply with all the environmental protection measures and safeguards proposed in the EIA/EMP report. All the recommendations made in respect of environmental management and risk mitigation measures relating to the project shall be implemented. : We are complying with the environmental protection measures and safeguards proposed in the EIA/EMP. All the recommendations made in respect of environmental management and risk mitigation measures relating to the project shall be implemented.
- (xiii) The company will undertake all relevant measures, as indicated during the Public Hearing for improving the Socio-economic conditions of the surrounding area. CSR activities will be undertaken by involving local villages and administration : The company is undertaking various socio-economic development projects in the surrounding areas involving local SHGs. The CSR activities for the period Apr-19 to Sept-19 is enclosed for reference.
- (xiv) The company shall undertake eco-developmental measures including community welfare measures in the project area for the overall improvement of the environment. The eco-development plan should be submitted to the SPCB within three months of receipt of this letter for approval : The company is undertaking various community development programmes in and around Hirakud involving local SHGs. Various welfare measures are undertaken.
- During October-2019 to March-2020 about Rs. 159.11 Lakhs have been spent towards community development projects including rural periphery development at Hirakud Complex.
- (xv) A separate Environmental Management Cell equipped with full fledged laboratory facilities shall be set up to carry out the Environmental Management and Monitoring functions. : A separate Environmental Management Cell with adequate laboratory facility has been set up at Hirakud Complex, to carry out environmental management and monitoring functions.



- (xvi) The implementation of the project vis-a-vis environmental action plans shall be monitored by the concerned Regional Office of the Ministry/ SPCB / CPCB. A six monthly compliance status report shall be submitted to monitoring agencies and shall be posted on the Website of the Company. : Strictly followed.
- (xvii) The project proponent shall inform the public that the project has been accorded environmental clearance by the Ministry and copies of the clearance letter are available with the SPCB/ Committee and may also be seen at Website of the Ministry at <http://envfor.nic.in>. This shall be advertised within seven days from the date of issue of the clearance letter, at least in two local newspapers that are widely circulated in the region of which one shall be in the vernacular language of the locality concerned and a copy of the same shall be forwarded to the concerned Regional Office of the Ministry. : Public was informed through advertisements in three widely circulated regional newspapers namely :  
(1) The Dharitri, Dated 12<sup>th</sup> February, 2008  
(2) The Agnisikha, Dated 12<sup>th</sup> February, 2008 &  
(3) The Sambad, Dated 14<sup>th</sup> February, 2008,  
  
This was also communicated to the Regional Office of MOEF, Bhubaneswar vide our letter of 14<sup>th</sup> February, 2008 along with copies of the news letters.
- (xviii) The project authorities shall inform the Regional Office as well as the Ministry, the date of financial closure and final approval of the project by the concerned authorities and the date of start of the project. : Will be complied.
- (xix) The Ministry may revoke or suspend the clearance, if implementation of any of the above conditions is not satisfactory. : Agreed

  
Signature



## Amendment Letter: J - 11011/144/2006-IA II (I), dated 19 October, 2009

Sl. No	CONDITIONS	STATUS AS ON 31 <sup>st</sup> March - 2020
3.0.1	All the specific and general conditions shall remain unchanged and have to be complied in toto and pari passu.	: Being complied
2	There shall be no change or modification in the ultimate capacity of the Smelter Plant (1,00,000 to 3,60,000 TPA) and Captive Power Plant (267.5 MW to 967.5 MW).	: There will be no change or modification of the ultimate capacity of Smelter Plant as well as Captive Power Plant.
3	All the emissions (ambient air, stack, fugitive and fluoride emissions) shall be within the permissible limit as prescribed in the Environmental Clearance dated 6 <sup>th</sup> February, 2008.	: All the emissions are within the prescribed limit. Monitoring reports are enclosed
4	No additional land shall be acquired.	: No additional land will be acquired for expansion.
5	No additional water shall be used.	: No additional water, other than the quantity mentioned in the EC, will be used.
6	A copy of clearance letter shall be sent by the proponent to concerned Panchayat Zilla Parishad / Municipal Cooperation, Urban local body and the local NGO, if any, from whom suggestions / representations if any were received while processing the proposal. The clearance letter shall also be put on the website of the company by the proponent.	: Copy of the clearance letter was submitted to local Urban local body after receiving the same.
7	The project proponent shall upload the status of compliance of the stipulated environment clearance conditions, including results of monitored data on their web site and shall update the same periodically. It shall simultaneously be sent to the Regional Office of the MOEF at Bhubaneswar, the respective Zonal office of CPCB and the OPCB. The criteria pollutant levels namely; SPM, RSPM, SO <sub>2</sub> , NO <sub>x</sub> (ambient levels as well as Stack emissions) or critical sectoral parameters, indicated for the projects shall be monitored and displayed at a convenient location near the main gate of the company in the public domain.	: The six monthly report of compliance of conditions of the Environment Clearance is submitted to Regional Office of Ministry of Environment & Forests & Climate Change (MoEF&CC), Bhubaneswar regularly in form of both soft and hard copies. The same is also uploaded in the website of the company. Critical sectoral environmental parameters are displayed in the main gates of both Smelter and Power Plant.
8	The project proponent shall also submit six monthly reports on the status of compliance of the stipulated	: Six monthly compliance of Environment Clearance (EC) conditions is submitted to





environment clearance conditions, including results of monitored data (both in hard copies as well as by e-mail) to the regional office of MOEF at Bhubaneswar, the respective Zonal office of CPCB and the OPCB. The Regional Office of this Ministry at Bhubaneswar / CPCB/ OPCB shall monitor the stipulated conditions.

the Regional Office of Ministry of Environment & Forests & Climate Change (MoEF&CC), Bhubaneswar regularly in form of both soft and hard copies.

- 9 The environmental 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 conditions and shall also be sent to the respective Regional Office of the MoEF by e-mail. : Being complied.
- 4.0 This letter is issued with prior approval from the Competent Authority. : Agreed
- 5.0 This letter shall be kept with the environment clearance issued by the Ministry vide letter No.:J-11011/100/2006-IA.II (I), dated 6<sup>th</sup> February, 2008. : Complied.

  
Signature



## COMPLIANCE TO ENVIRONMENT CLEARANCE (EC) CONDITIONS

Name of the Project : EXPANSION OF SMELTER PLANT FROM 65 KTPA TO 100 KTPA BY RELOCATION OF POTS FROM BELGAUM AT HIRAKUD  
Clearance No. & Date : J 11011/53/2004-IA II (I), dated: July 14, 2005  
Compliance Period : October 2019 - March 2020

Sl. No.	Clearance Condition	Compliance Status (as on 31 <sup>st</sup> March, 2020)
1.0	<p>This has reference to your communication No. Nil dated 2<sup>nd</sup> April 2004 along with application, EIA/EMP and related project documents, CD and subsequent clarifications furnished by you vide your letters dated 9<sup>th</sup> March, 2005 and 25<sup>th</sup> May, 2005 for environmental clearance on the above mentioned project. The Ministry of Environment and Forests has examined your application. It is noted that proposal involves expansion of alumina smelter plant capacity from 65 to 100 KTPA by adopting HSS technology.</p> <p>Land area required for the project is 13.5 ha. of which 11.48 ha. is for the existing plant. The project does not involve diversion of forest land and displacement of people. Water requirement would increase of 1079 m<sup>3</sup>/d to 1278 m<sup>3</sup>/d after the proposed expansion. Additional 200 m<sup>3</sup> /d of water requirement will be met from cooling tower blow down from captive power plant (CPP) except for the drinking water. Water requirement will be met from the Hirakud reservoir. Orissa State Irrigation Department has given permission for drawl of 10 cusec of water from Hirakud Dam. Public hearing panel has considered the project in the meeting held on 21.12.2004. The Orissa State Pollution Control Board has granted NOC on 9.3.2005. Total cost of the project is Rs.232 crores.</p>	<p>The expansion was based on HSS technology involving relocation of pots from Belgaum unit. The technology was later converted to Pre-bake one.</p> <p>The project didn't involve diversion of forest land and displacement of people.</p> <p>Water requirement of the project is met from the recycled water from outlet of ETP.</p> <p>Raw water is sourced from Hirakud Dam reservoir at CPP. Approval has been accorded by Dept. of Water Resources, Govt. of Odisha for withdrawal of 14 cusec water from Hirakud Dam.</p>



2.0

The Ministry of environment and Forests hereby accords environmental clearance to the above project under the provisions of EIA Notification dated 27<sup>th</sup> January 1994 as amended subsequently subject to strict compliance of the following specific and general conditions:

Agreed

**A. SPECIFIC CONDITIONS:**

- i. The gaseous emissions from various process units shall conform to the standards prescribed from time to time. The State Board may specify more stringent standards for the relevant parameters keeping in view the nature of the industry, its size and location. At no time the emission level should go beyond the prescribed standards. In the event of failure of any pollution control system adopted by the unit, the respective unit should not be restarted until the control measures are rectified to achieve the desired efficiency.  
Ambient air quality monitoring stations should be set up in consultation with the Orissa Pollution Control Board. Data should be regularly monitored and records maintained and report submitted to the Ministry/CPCB/SPCB once in six months.  
FTP (dry scrubbers) have been installed for the emission from the smelting process to meet the standards prescribed by MoEF&CC and State Pollution Control Board. We are regularly monitoring the particulate and fluoride emission from the FTP outlets and the fugitive fluoride from the pot rooms. The results are being submitted to SPCB/CPCB/MoEF&CC regularly.  
Seven numbers of ambient air quality stations have been set up for the Smelter Plant. Monitoring of ambient air is being done regularly in these stations and results are reported to SPCB every month and MoEF&CC through six monthly report.
- ii. There shall be no discharge of process effluent. As reflected in the EIA/EMP report, there shall be zero effluent discharge from the smelter plant. In addition, efforts shall be made to re-use waste water from the existing plant. Wastewater from the domestic effluent after treatment in Sewage Treatment Plant shall conform to the prescribed standards. The treated effluent shall be used for green belt development.  
RO based ETPs (two of 250 KLD capacity and one of 50 KLD capacity) have been installed for treatment of waste water from Smelter Plant. All the treated waste water is reused in the plant.  
Four STPs (500 KLD, 100 KLD, 400 KLD, 300 KLD capacities) have been provided for treatment of sewage water from canteen, toilets & colony of both Smelter & Power plant at Hirakud.
- iii. In plant, control measures for checking fugitive emissions from spillage/ raw materials handling shall be provided.  
Pre-baked technology has been adopted to reduce the fugitive fluoride emissions. Monitoring of fluoride emission from pot



Fluoride emissions shall be monitored from the existing pot room, proposed pot room and in the forage around the smelter complex and the data submitted regularly to the Ministry/RO Bhubaneswar and SPCB. Further, dry scrubbing system to control the emissions from the pot lines shall be provided. The fluoride emissions shall not exceed 0.8 kg/t of aluminium produced in the proposed expansion. In the existing plant, the fluoride emission level of 0.8 kg of aluminium produced shall be met by December 2008. Further, the pot emissions through fume treatment plant shall not exceed 0.30 kg/tonne of aluminium produced.

rooms and forage fluoride around smelter complex is being done regularly and data is submitted to the Ministry/RO, Bhubaneswar and SPCB. We have already converted all our HSS pots to prebake with dry scrubbing system and present fluoride emission is within the stipulated norms.

The emissions from stack and fugitive are within limit.

iv. Fugitive fluoride emissions from the pot rooms shall not exceed 0.4 kg/MT of aluminium produced. Fugitive emissions shall be monitored and report submitted regularly to Ministry/RO, Bhubaneswar and SPCB.

As stated in our addendum to the EIA, the fugitive fluoride emissions from pot rooms shall not exceed 0.4 kg/MT of aluminium produced. Fugitive fluoride is being monitored and reported to ministry /RO and SPCB.

v. Solid waste generated from the smelter plant will be spent pot lining (2200 TPA), used oil (3 KLPD) and used batteries. The spent pot lining generated from the smelter shall be properly treated and disposed off as per CREP's recommendations.

SPL is stored inside covered sheds on concrete floor, as per the authorization from OSPCB. The Carbon portion being sent to authorized third party for disposal & the Non carbon portion is stored inside the storage sheds.

The used oil is being sent to authorized recyclers.

Used batteries are being returned to suppliers on buy back.

vi. A green belt of adequate width and density shall be developed within and around the plant premises as per the CPCB guidelines.

Plantation has been done in the periphery, in vacant areas inside the plants, in surrounding areas of Hirakud township and on ash disposal site. Experienced professionals have been engaged for plantation and maintenance of the green belt. Around 7800 saplings have been planted in the year 2019-20.



- vii. Occupational Health Surveillance of the workers shall be done on a regular basis and records maintained as per the Factories Act. Periodic medical surveillance tests are being done and recorded. During the year 2019-20 (October-19 to March-20), we have conducted following occupational health surveillance.
- Pre-employment health surveillance against new recruitment- 38
  - Periodic medical health surveillance for permanent employees- 1064
  - Periodic medical health surveillance for contractual employees- 4691
- No significant abnormalities detected during regular screening of any employees. Treatment and advice was given for minor ailments detected during checkup.
- viii. Company shall undertake rain water-harvesting measures to recharge the ground water and action plan in this regard should be submitted to the Ministry. Studies by the Dept. of Civil Engineering, A.U College of Engineering, Andhra University, Visakhapatnam in 2007 and M/S Visiontek Services Pvt. Ltd, Bhubaneswar in 2012, recommend not to adopt rain water harvesting in Hirakud area for:
- (i) Presence of shallow water table
  - (ii) Hard rock at shallow depth
  - (iii) Water logging in the area and
  - (iv) Rising trend of the water table in the area
- ix All the recommendations made in the Charter of Corporate Responsibility for Environment protection (CREP) for the aluminium sectors shall be strictly implemented. We will strive to implement the recommendations of CREP. Compliance to CREP recommendations is enclosed for reference.





**B. GENERAL CONDITIONS:**

- i. The project authorities must strictly adhere to the stipulations made by the Orissa Pollution Control Board and the State Government. Being complied.
- ii. No further expansion or modifications in the plant should be carried out without prior approval of the Ministry of Environment and Forests. Being complied. No further expansion or modification has been planned.
- iii. Adequate ambient air quality-monitoring stations shall be established in the downward direction as well as where maximum ground level concentration of SPM, SO<sub>2</sub> and NO<sub>x</sub> are anticipated in consultation with the State Pollution Control Board. Data on ambient air quality, fugitive emission and stack emissions should be regularly submitted to this Ministry including its Regional Office at Bhubaneswar and the State Pollution Control Board/ Central Pollution Control Board once in six months. Seven no. of ambient air monitoring stations have been installed. The ambient air quality, fugitive fluoride and stack emissions are done as stipulated and the data are regularly submitted to the SPCB every month. The same is submitted to ministry's regional office at Bhubaneswar and the Central Pollution Control Board at least once in six months.
- iv. Industrial wastewater shall be properly collected, treated as to conform to the standards prescribed under GSR 422 (E) dated 19<sup>th</sup> May, 1993 and 31<sup>st</sup> December, 1993 or as amended from time to time. The treated wastewater should be utilised for plantation purpose. RO based ETPs (two of 250 KLD capacity and one of 50 KLD capacity) have been installed. and Five STPs (500 KLD, 100 KLD, 400 KLD, 300 KLD capacities) have been provided for treatment of sewage water from canteen, toilets & colonies of Hirakud Complex. The treated water is being recycled and reused inside the plant.
- v. The overall noise levels in and around the plant area should be kept well within the standards (85 dBA) by providing noise control measures including acoustic hoods, silencers, enclosures etc. on all sources of noise generation. The ambient noise levels should conform to the standards prescribed under EPA Rules, 1989 viz. 75 dBA (day time) and 70 dBA (night time). Noise control measures have been provided at sources of generation. The ambient noise level is within prescribed limit and the data is being reported in six monthly reports



- vi. M/s Hindalco shall comply with the Hazardous Waste (Management & handling) Rule, 2003 and Hazardous Chemicals Rules, 2000 and amendments there under. Being Complied as per Hazardous and Other Wastes (Management and Trans-boundary Movement) Rules, 2016.
- vii. The project proponent shall also comply with all the environmental protection measures and safeguards recommended in the EIA / EMP report. Further, the company must undertake socio-economic development activities in the surrounding villages like community development programmes, educational programmes, health care, multi-cropping etc. About Rs. 159.11 Lacs have been spent at Hirakud complex towards community development projects including periphery development during April 2019 to March 2020.
- viii. The project authorities will provide adequate funds both recurring and non-recurring to implement the conditions stipulated by the Ministry of Environment and Forests as well as the State Government along with the implementation schedule for all the conditions stipulated herein. The funds so provided should not be diverted for any other purposes. As stated in the EIA report, funds are being allocated for addressing the environmental issues and to implement the conditions stipulated by the Ministry of Environment and Forests, as well as the State Government. These funds are not diverted for any other purpose.
- ix. The regional Office of this Ministry at Bhubaneswar/Central Pollution Control Board / State Pollution Control Board will monitor the stipulated conditions. A six monthly compliance report and the monitored data along with statistical interpretation shall be submitted to them regularly. Six monthly compliance report is being submitted regularly to the Regional Office of MoEF&CC along with data on environmental monitoring.



- x. The Project Proponent shall inform the public that the project has been accorded environmental clearance by the Ministry and copies of the 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>. This should be advertised within seven days from the date of issue of the clearance letter, at least in two local newspapers that are widely circulated in the region of which one shall be in the vernacular language of the locality concerned and a copy of the same shall be forwarded to the Regional Office. Complied

- xi. The project Authorities shall inform the Regional Office as well as the Ministry, the date of financial closure and final approval of the project by the concerned authorities and the date of commencing the land development work.

Projects	Pots	Project start	Capitalization	
			Start Month	End Month
Expansion from 100 Ktpa to 146 Ktpa by retrofit existing pots with prebake Tech.	481	May-05	Feb-07	Mar-09
Addition of 36 nos 85kA prebake pots (146-155 Ktpa)	36	Apr-08	Jan-09	Jul-09
Addition of 28 nos 85kA prebake pots (155-161.4 Ktpa)	28	Aug-09	Jul-09	Dec -10
Addition of 10 nos 85kA prebake pots (161.4- 163.7 Ktpa)	10	Dec -10		Nov-12
80 nos. 235 kA prebake pots (163.7 Ktpa to 215.3ktpa)	80	Jun-09	Aug-13	Oct-14

- 3.0 The Ministry may revoke or suspend the clearance, if implementation of any of the above conditions is not satisfactory. - Agreed
- 4.0 The Ministry reserves the right to stipulate additional conditions if found necessary. The Company in a time bound manner will implement these conditions. - Agreed



5.0

The above conditions will be enforced, inter-alia under the provisions of the Water (Prevention & Central of Pollution) Act, 1974, the Air (Prevention & Control of Pollution) Act, 1981, the Environment (Protection) Act, 1986, Hazardous Wastes (Management and Handling) Rules, 2003 and the Public Liability Insurance Act, 1991 along with their amendments and rules.

  
Signature



## COMPLIANCE TO ENVIRONMENT CLEARANCE (EC) CONDITIONS

Name of the Project : EXPANSION OF SMELTER PLANT AT HIRAKUD FROM 30 KTPA TO 65 KTPA

Clearance No. & Date : J-11011/42/2000-IA II, dated: 10<sup>th</sup> January 2001

Compliance Period : October 2019 - March 2020

Sl. No.	Condition	Compliance Status as on 31 <sup>st</sup> March 2020
<b>SPECIAL CONDITIONS:</b>		
i.	The gaseous emissions [SO <sub>2</sub> , NO <sub>x</sub> , Fluoride, Coal tar pitch volatiles (CTPV)] and particulate matters, from various process units should conform to the standards prescribed by the concerned authorities from time to time. At no time, the emission level should go beyond the stipulated standards. In the event of failure of pollution control system(s) adopted by the unit, the respective unit should not be restarted until the control measures are rectified to achieve the desired efficiency.	<p>The standards stipulated for various emissions are being strictly followed. Monitoring of particulate matter and fluoride at outlets of FTPs (Dry scrubbers) and fugitive fluoride from pot rooms are carried out every month in Smelter. Particulate matter, SO<sub>2</sub> and NO<sub>x</sub> are also monitored from the stacks of cast houses. The height of the stacks is designed as per the guidelines.</p> <p>We have converted all our HSS pots to prebake and the prebake anode requirement is met through our sister plant M/s Aditya Aluminium, Lapanga. We do not have the green anode and anode baking plant, hence the CTPV emission due to this is eliminated.</p>
ii.	A minimum of five ambient air quality monitoring stations should be set up based on the micro meteorological conditions as well as where maximum ground level concentration of SPM, SO <sub>2</sub> , NO <sub>x</sub> , Fluoride and volatiles are anticipated in consultation with the State Pollution Control Board. The data recorded should be submitted to the Regional Office at Bhubaneswar every six months and to the SPCB every three months.	<p>Seven ambient air stations are monitored and the results are reported to SPCB through progress report every month and to Regional Office, MoEF&amp;CC through six monthly compliance reports. We monitor regularly forage fluoride in lieu of ambient air as per CREP recommendation.</p> <p>The ambient fluoride in all the locations were found below detectable limit during Oct'19 to Mar'20.</p>
iii.	As reflected in EMP, the company should be installing state of art dry scrubber technology to bring down the fluoride emission from the present level of 4.25 kg/t Al. To 2.60 kg/t Al. (minimum). Fugitive emissions must be monitored and controlled by taking adequate measures including sealing of pots & hooding.	State-of-the-art technology dry scrubbing system has been installed in all the FTPs attached to the pot lines and the fluoride emission from all FTPs are well within limit. The stack and fugitive emissions are being monitored regularly and the data is submitted to Board in monthly progress report.
iv.	As dry process will be adopted there will be no generation of process effluent. The effluent from the utilities should be adequately treated to meet the norms prescribed for land disposal and should be regularly monitored before using it for irrigating the green belt.	At present RO based ETPs (two of 250 KLD capacity and one of 50 KLD capacity) have been installed for existing 216 KTPA Smelter. Four STPs (500 KLD, 100 KLD, 400 KLD, 300 KLD capacities) have been provided for treatment of sewage water from canteen, toilets & colonies of the existing plant.



v.	The hazardous solid waste (spent pot linings) should be disposed off in a secured landfill site approved by the Orissa SPCB. The secured landfill site should be provided with impermeable HDPE lining and leachate collection facility. As the ground water table in the area is high the feasibility of vertical stacking of the spent pot lining also needs to be explored and a report submitted to the Ministry in three months.	Vertical stacking approved from OPCB vide letter no.-4572, dated 13.03.2001. The carbon content of spent pot lining is disposed to authorized agency and the non-carbon (refractory) content is stored in covered sheds with concrete platform. Captive Secured Landfill Facility (SLF), with impermeable HDPE lining and leachate collection facility with approval of OSPCB, has been provided for disposal of hazardous waste.
vi.	The fluoride levels in the ground water quality around the hazardous waste disposal site should be regularly monitored for fluoride and data recorded to ensure there is no contamination of ground water.	Fluoride in ground water is monitored near hazardous waste storage & disposal site and the results are reported to SPCB in progress report every month and to Regional Office, MoEF&CC every six month.
vii.	The project proponent shall also comply with all the environmental protection measures and safeguards recommended in the EIA and risk analysis report.	Complied
<b>GENERAL CONDITIONS:</b>		
i.	The project authorities must strictly adhere to the stipulations made by the Orissa State Pollution Control Board and the State Government.	Stipulations from OSPCB or Govt. are strictly adhered.
ii.	No further expansion or modifications in the plant should be carried out without prior approval of the Ministry of Environment and Forests.	No further expansion or modification planned now.
iii.	The project authorities must strictly comply with rules and regulations under Manufacture, Storage and Import of Hazardous Chemicals Rules, 1989 as amended on 3 <sup>rd</sup> October, 1994.	Being complied.
iv.	The project authorities must strictly comply with rules and regulations with regard to handling and disposal of hazardous wastes in accordance with the Hazardous Wastes (Management & Handling) Rules, 1989. Authorization from the State Pollution Control Board must be obtained for collections/treatment/storage/ disposal of hazardous wastes.	Compliance done as per Hazardous and Other Wastes (Management and Trans-boundary Movement) Rules, 2016. Hazardous Waste Authorization has been obtained from State Pollution Control Board for collections/treatment/storage/ disposal of hazardous wastes.
v.	Occupation health surveillance programme should be undertaken as regular exercise for all the employees, specifically for those engaged in handling hazardous substances.	Periodic medical surveillance tests are being conducted for all the employees including contractual employees regularly. During the year October-2019 to March-20, we have conducted following occupational health surveillance.

		<p>- Pre-employment health surveillance against new recruitment- 38  - Periodic medical health surveillance for permanent employees- 1064  - Periodic medical health surveillance for contractual employees-4691</p> <p>No significant abnormalities detected during regular screening of any employees. Treatment and advice was given for minor ailments detected during check up.</p>
vi.	The overall noise levels in and around the plant area should be kept well within the standards (85 dBA) by providing noise control measures including acoustic hoods, silencers, enclosures etc. on all sources of noise generation. The ambient noise levels should conform to the standards prescribed under EPA Rules, 1989 viz. 75 dBA (day time) and 70 dBA (night time).	<p>Complied.</p> <p>Noise control measures have been provided at sources of generation. The ambient noise level is within prescribed limit and the data is being reported in six monthly reports.</p>
vii.	The project proponent should have a scheme for social upliftment in the nearby village with reference to contribution in road construction, education of children, festivals, health centres sanitation facilities, drinking water supply, community awareness and employment to local people wherever possible both for technical and non technical jobs.	We are undertaking several socio-economic development activities in the surrounding villages like community development, educational programmes and health care, multi-cropping etc. About Rs. 159.11 lacs have been spent at Hirakud complex towards community development projects including rural periphery development during April 2019 to March 2020. We also give priority to the local employments.
viii.	Green belt of adequate width and density should be provided to mitigate the effects of fugitive emission all around the plant. A minimum of 25% of the total land acquired should be developed as green belt in consultation with the local DFO.	Plantation has been done in the periphery, in vacant areas inside the plants, in surrounding areas of Hirakud township and on ash disposal site. Experienced professionals have been engaged for plantation and maintenance of the green belt. Around 7800 saplings have been planted in the year 2019-20.
ix.	A separate environmental management cell equipped with full fledged laboratory facilities must be set up to carry out the environmental management and monitoring functions.	Separate Environment Cell exists for Hirakud Complex with full-fledged laboratory facilities for environmental management and monitoring functions.
x.	The project authorities will provide adequate funds both recurring and non-recurring to implement the conditions stipulated by the Ministry of Environment and Forests as well as the State Government along with the implementation schedule for all the conditions stipulated herein. The funds so provided should not be diverted for any other purpose.	Being complied.



xi.	The implementation of the project vis-à-vis environmental action plans will be monitored by Ministry's Regional Office at Bhubaneswar/State Pollution Control Board/Central Pollution Control Board. A six monthly compliance status report should be submitted to monitoring agencies.	Being complied  Six monthly EC compliance is being submitted to the Regional Office of MoEF&CC regularly.																																		
xii.	The project proponent should inform the public that the project has been accorded environmental clearance by the Ministry and copies of the clearance letter are available with the State Pollution Control Board/Committee and may also be seen at Web site of the Ministry of Environment and Forests at <a href="http://WWW.envfor.nic.in">http://WWW.envfor.nic.in</a> . This should be advertised in at least two local newspapers that are widely circulated in the region of which one shall be in the vernacular language of the locality concerned.	Complied																																		
xiii.	The project authorities should inform the Regional Office as well as the Ministry, the date of financial closure and financial approval of the project by the concerned authorities and the date of commencing the land development work.	<table border="1"> <thead> <tr> <th rowspan="2">Projects</th> <th rowspan="2">Pots</th> <th rowspan="2">Project start</th> <th colspan="2">Capitalization</th> </tr> <tr> <th>Start Month</th> <th>End Month</th> </tr> </thead> <tbody> <tr> <td>Expansion from 100 Ktpa to 146 Ktpa by retrofit existing pots with prebake Tech.</td> <td>481</td> <td>May-05</td> <td>Feb-07</td> <td>Marc-09</td> </tr> <tr> <td>Addition of 36 nos 85kA prebake pots (146-155 Ktpa)</td> <td>36</td> <td>Apr-08</td> <td>Jan-09</td> <td>Jul-09</td> </tr> <tr> <td>Addition of 28 nos 85kA prebake pots (155-161.4 Ktpa)</td> <td>28</td> <td>Aug-09</td> <td>Jul-09</td> <td>Dec -10</td> </tr> <tr> <td>Addition of 10 nos 85kA prebake pots (161.4-163.7 Ktpa)</td> <td>10</td> <td>Dec -10</td> <td></td> <td>Nov-12</td> </tr> <tr> <td>80 nos. 235 kA prebake pots (163.7 Ktpa to 215.3ktpa)</td> <td>80</td> <td>Jun-09</td> <td>Aug-13</td> <td>Oct-14</td> </tr> </tbody> </table>	Projects	Pots	Project start	Capitalization		Start Month	End Month	Expansion from 100 Ktpa to 146 Ktpa by retrofit existing pots with prebake Tech.	481	May-05	Feb-07	Marc-09	Addition of 36 nos 85kA prebake pots (146-155 Ktpa)	36	Apr-08	Jan-09	Jul-09	Addition of 28 nos 85kA prebake pots (155-161.4 Ktpa)	28	Aug-09	Jul-09	Dec -10	Addition of 10 nos 85kA prebake pots (161.4-163.7 Ktpa)	10	Dec -10		Nov-12	80 nos. 235 kA prebake pots (163.7 Ktpa to 215.3ktpa)	80	Jun-09	Aug-13	Oct-14		
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Signature



## COMPLIANCE TO ENVIRONMENT CLEARANCE (EC) CONDITIONS

Name of the Project : 100 MW CPP (UNIT-III) EXPANSION AT HIRAKUD  
Clearance No. & Date : J-13012/ 10/2004 - IA.II (T), dated 21<sup>st</sup> September 2005  
Compliance Period : October 2019 - March 2020

Sl No	Condition	Compliance Status As on 31 <sup>st</sup> March 2020
3. (i)	The conditions stipulated by Orissa Pollution Control Board vide their letters No. 33856/Ind-I-CON-3038 dated 03.12.2004 and no. 19425/IND-I-CON-3038 dated 29.6.2005 shall be strictly implemented.	All the conditions stiputed by OSPCB are being strictly implemented
3. (ii)	Ash content in coal should not exceed 40% and the Sulphur Content should not exceed 0.50 %	Ash content in the coal for the period Oct'19 to Mar'20 was around 40.5% and the sulphur content was around 0.40%.
3. (iii)	Two Stacks of 130 mtr height with continuous on-line monitoring equipment and exit velocity of 30 m/s to be maintained. CFBC Boiler to be installed with in-built SO <sub>2</sub> reduction measures and low NO <sub>x</sub> burners shall be installed	One Stack of 130 m height, connected to three nos. of CFBC Boilers has been provided. Continuous online monitoring system has been installed in the stack. Designed exit velocity is less than 30 m/s. All the three nos. of CFBC Boilers have been provided with in-built SO <sub>2</sub> reduction measures and low NO <sub>x</sub> devices.
3. (iv)	High efficiency Electrostatic Precipitators (ESPs) having efficiency of not less than 99.9% shall be installed to ensure that SPM emissions do not exceed 100 mg/NM <sup>3</sup> . Bag filters shall be installed in the coal handling area.	High Frequency Rectifier Transformers (HFTRs) have been provided in the ESPs to keep the particulate matter (PM) emissions from the stack below 50 mg/ NM <sup>3</sup> , as stipulated by MoEF&CC/CPCB/OSPCB. The average PM value for the period Oct'19 to Mar'20 was 42.85 mg/NM <sup>3</sup> , which is far below the limit of 50 mg/NM <sup>3</sup> .  Further, bag filters have been provided in the Coal handling Plant, Ash Silos, etc for suppression of fugitive dust.



- 3 (v) Ash utilisation should be carried out as per provisions of the notification on Fly Ash Utilisation issued by the Ministry in September, 1999 and its amendment. Borough earth shall not be taken from ash pond area for construction of ash dyke etc.
- Ash, after being supplied to various avenues of utilization, is disposed dry in the ash disposal area i.e Ash mound.  
About 4, 29, 722 MT of ash (from all the units) was utilized in different applications (Cement manufacturing, Bricks manufacturing, road making and low-lying area filling) during the period Oct'19 to Mar'20 with utilization 95.7% of generated ash. The detailed ash utilization is enclosed.
3. (vi) Closed Circuit Cooling Towers with induced draft shall be provided and it shall be ensured that only minimum water is drawn for makeup purposes from Hirakud reservoir. The effluent to be discharged into Kharjour nala should meet the prescribed discharge norms.
- Closed circuit induced draft cooling tower has been provided and is being operated at minimum 5.0 Cycle of Concentration (COC) in order to ensure minimum use of fresh water for make-up purposes. No effluent is discharged to Khojurnallah in dry season, as directed by OSPCB through its CTO
3. (vii) Rain water harvesting shall be adopted in consultation with Central Groundwater Authority/ Board. The plan for the same shall be submitted within 3 months.
- Studies by the Dept. of Civil Engineering, A.U College of Engineering, Andhra University, Visakhapatnam in 2007 and M/S Visiontek Services Pvt. Ltd, Bhubaneswar in 2012, recommend not to adopt rain water harvesting in Hirakud area for:
- (i) Presence of shallow water table
  - (ii) Hard rock at shallow depth
  - (iii) Water logging in the area and
  - (iv) Rising trend of the water table in the area
- 3 (viii) Regular monitoring of water quality including heavy metals should be undertaken around ash dyke and the project area to ascertain the change in the water quality due to leaching of contaminants, if any, from ash disposal area.
- Regular monitoring of water quality including heavy metals of leachate of ash disposal area is being carried out and the water quality meets the prescribed standard.
- 3 (ix) Noise level should not exceed 75 dBA (Leq). People working in the high noise area, should be provided with ear protective devices.
- Noise abatement measures such as glass shields have been provided to Operator cabins and workstations. People working in the high noise area are provided with ear- muffs and PPE. Noise quality is being monitored at various places in and around the plant regularly and data for Oct'19 to Mar'20 is enclosed.



- 3 (x) Greenbelt along the plant boundary and plantation in vacant space in and around Hirakud complex shall be developed. A plan in this regard shall be prepared and submitted within 3 months.
- Afforestation and plantation is being taken on the Ash transport road, in and around Plant and ash Mound area etc. About 6.86 lakh trees have been planted since 1993-94. About 8400 saplings have been planted during the year 2019-20. The details of plantation is enclosed.
- 3 (xi) Regular monitoring of the air quality shall be carried out in and around the power plant and records shall be maintained. Six monthly reports shall be submitted to this Ministry and its Regional Office at Bhubaneswar.
- The ambient air quality is being monitored at seven locations regularly and data is submitted to Regional Office of MoEF&CC through half yearly EC compliance reports every year. The ambient air quality data monitored for the period Oct'19 to Mar'20 is enclosed.
- 3 (xii) For controlling fugitive dust, regular sprinkling of water in vulnerable areas of the plant shall be ensured.
- For control of fugitive dust regular sprinkling is carried out in coal yard, roads around coal yard, Ash silo area, ash transportation road etc through fixed sprinklers and mobile water sprinklers. Ash conditioners have been provided to each ash silo for moisturization of ash unloaded to trucks.
- 3 (xiii) The project proponent shall advertise in at least two local newspapers widely circulated in the region around the project, one of which should be in the vernacular language of the locality concerned, informing that the project has been accorded environmental clearance and copies of clearance letters 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>.
- Complied
- 3 (xiv) A separate environment monitoring cell with qualified staff shall be set up for implementation of the stipulated environmental safeguards.
- A separate Environmental Management Cell with adequate laboratory facility has been set up at Hirakud Complex, to carry out environmental management and monitoring functions.
- 3 (xv) Separate funds shall be allocated for implementation of environmental protection measures alongwith item-wise break-up. These cost shall be included as
- Provisions are being made to allocate the funds for controlling the Pollution Control Equipment and abating the Pollution every year. The actual environmental expenditure for the period Oct'19





- part of the project cost. The funds earmarked for the environment protection measures shall not be diverted for other purposes and year-wise expenditure shall be reported to the Ministry.
- to Mar'20 is enclosed.
3. (xvi) Half yearly report on the status of implementation of the stipulated conditions and environmental safeguards shall be submitted to this Ministry/ Regional Office/CPCB/SPCB. Being Complied
- 3 (xvii) Regional Office of the Ministry of Environment & Forests located at Bhubaneswar will monitor the implementation of the stipulated conditions. Complete set of Environmental Impact Assessment Report and Management Plan should be forwarded to the Regional Office for their use during monitoring. Environmental Impact Assessment & Management Plan have already been submitted to Bhubaneswar Regional office.
- 3 (xviii) Full cooperation shall be extended to the Scientists/Officers from the Ministry/Regional Office of the Ministry at Bhubaneswar/CPCB/SPCB during monitoring of the compliance of environmental status. Being complied
- 4 The Ministry reserves the right to revoke the clearance if stipulated conditions are not implemented to the satisfaction of the Ministry. The stipulated conditions could be modified / altered or new conditions stipulated by the Ministry or any other Competent Authority in the interest of environment protection and the same shall be implemented by the project proponent. Agreed
- 5 The environmental clearance accorded shall be valid for a period of 5 years for starting construction / operation of the power plant. In case the project authorities fail to do so within this This is an operating unit.



stipulated period, this environmental clearance shall stand lapsed automatically.

- 6 In case of any deviation or alternation in the project profile 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. Agreed

*Prakash*



## COMPLIANCE TO ENVIRONMENT CLEARANCE (EC) CONDITIONS

**Name of the Project :** 77 MW THERMAL POWER PROJECT AT HIRAKUD

**Clearance No. & Date :** J-13011/1/99-IA.II (T), dated 04<sup>th</sup> August, 1999

**Compliance Period :** October 2019 - March 2020

Sl No	Conditions	Compliance (as on 31 <sup>st</sup> March 2020)
2. (i)	All the conditions stipulated by Orissa Pollution Control Board vide their letter no. 10039/Ind-II-NOC-906 dated 27th May, 2003 should be strictly implemented.	All the condition stipulated by OSPCB are strictly implemented.
2. (ii)	One stack of height 100 mts with three flues and continuous monitoring facility should be installed. Exist velocity should be maintained around 20mts/sec as the predictions have been based on the same.	A single Stack of height 130 mtr. Height has been provided to the unit Forbes Marshall-Codel make Opacity Monitor (Model No: DCEM-2100) and Continuous Flue gas Analyser of SO <sub>2</sub> , NO <sub>x</sub> and CO <sub>2</sub> (Model No: GCEM 4000) have been installed in the Stack.
2. (iii)	Electrostatic precipitators having efficiency of not less than 99.8% should be installed and it should be ensured that the particultaed emission would not exceed the prescribed limit of 150 mg/Nm <sup>3</sup> .	High Frequency Rectifier Transformers (HFTRs) have been provided in the ESPs to keep the particulate matter (PM) emissions from the stack below 50 mg/ NM <sup>3</sup> , as stipulated by MoEF&CC/CPCB/OSPCB. The average PM value for the period Oct'19 to Mar'20 was 42.52 mg/NM <sup>3</sup> , which is far below the limit of 50 mg/NM <sup>3</sup> . The values are enclosed.
2. (iv)	Closed Circuit Cooling Device with induced draft should be provided and it should be ensured that only minimum water is drawn for makeup purposes from Hirakud reservoir as permitted by the State Irrigation Department.	Closed circuit cooling tower with induced draft is providedwhich operates with more than 5.0 Cycle of Concentration (COC) in order to ensure the use of minimum fresh water for make-up purposes.
2. (v)	Noise level should he limited to 85 dBA and regular maintenance of equipment be undertaken for people working in the area of generator halls and other high noise areas, ear plug should be provided.	Noise abatement measures such as glass shields have been provided to Operator cabins and workstations. People working in the high noise area are provided with ear- muffs and PPE.



2. (vi) For controlling fugitive dust, regular sprinkling of water in coal handling and other vulnerable areas of the plant should be ensured
2. (vii) Afforestation should be undertaken covering an area of about 10 acres for Unit-II and intensification of the existing green belt should be ensured. As committed, the Company should aim to plant 30,000-40,000 saplings every year. Vulnerable area such as coal handling plant, ash dump areas should be given preference for plantation work
2. (viii) Coal should be used @ 57.59 tonnes/h with GCV of around 3610 KCal/kg and Sulphur content not exceeding 0.49%. The fuel should be transported only in covered tippers/trucks from Ib Valley Coalfields.
2. (ix) Since movement of about 100-120 Tippers/trucks will be involved for Unit-II in addition to the existing movement of similar number of trips for Unit-I, a proper traffic scheduling should be evolved and each vehicle should be checked for adequacy of cover before despatch. The possibility of rail transport by extending the existing rail line from the present rail at Lapanga head to the mine site and from Sambalpur to the plant should also be examined.

Noise quality is being monitored at various places in and around the plant regularly and data for Oct'19 to Mar'20 is enclosed.

For control of fugitive dust regular sprinkling is carried out in coal yard, roads around coal yard, Ash silo area, ash transportation road etc through fixed sprinklers and mobile water sprinklers. Ash conditioners have been provided to each ash silo for moisturization of ash unloaded to trucks.

Afforestation and plantation is being taken on the Ash transport road, in and around Plant and ash Mound area etc. About 6.86 lakh trees have been planted since 1993-94. About 8400 saplings have been planted during the year 2019-20. The details of plantation is enclosed.

Coal is being used with GCV of about 3248 Kcal/Kg and average sulphur content of about 0.40 %. The coal is sourced from captive coal mine at Garepalma in the state of Chhatisgarh and coal mines in the state of Odisha and is transported to the plant through railways and Volvo-trucks covered with tarpaulin. The Sulphur content of Coal for the period Oct'19 to Mar'20 is enclosed.

For transportation of coal from captive coal mine and various sources inside Odisha a Railway Siding (platform for unloading from wagons and loading into trucks destined to nearby coal yard) has been provided in the premise of Power Plant. Coal is also transported to the plant by tarpaulin covered trucks.



2. (x) As per the proposal submitted for Ash Utilisation, it should be ensured that fly ash is used in cement industry, brick making and in raising the ash dyke etc. Efforts should also be made in the area of mine filling, land development and agriculture etc. Acquisition of additional land to the tune of 50 acres for ash disposal should be avoided as far as possible by ensuring 100% utilization.
- Ash, after being supplied to various avenues of utilization, is disposed dry in the ash disposal area i.e. Ash mound.
- About 4,29,722 MT of ash (from all the units) was utilized in different applications (Cement manufacturing, Bricks manufacturing, road making and low-lying area filling) during the period Oct'19 to Mar'20 with utilization 95.7% of generated ash. The detailed ash utilization is enclosed.
- To ensure 100% ash utilization, a detailed ash utilization program is in place.
2. (xi) All effluents generated in various plant activities should be collected in the Central Effluent Treatment plant and treated effluents to the tune of 160m<sup>3</sup>/hr from CPP unit-1 and unit II only should be discharged after ensuring adherence to specified standards before its release in Kharjorel nallah tributary of Mahauadi river. The concept of zero discharge should be adopted to a maximum possible extent.
- Cooling Tower blow downs of the plant is treated in a RO based ETP of capacity 120 m<sup>3</sup>/hr. Other effluents are collected in a Common Monitoring Basin and treated in the RO and is reused in the Cooling Towers, -house activities such as coal-yard spraying, road cleaning, water spraying at ash disposal area and gardening etc.
2. (xii) The project authorities should interact with the concerned State Government Departments for facilitating implementation of the "Project Turtle" of the State Government. The proposal drawn in this regard including the proposed financial support by the Company should be submitted to the Ministry within three months.
- Interactions have already been made with the Chief Conservator of Forests-Wild Life and the principle Secretary, Forests and Environment Department, Government of Orissa for facilitating implementation of the "Project Turtle" of the State Government by providing financial support. We are yet to receive the communication on the above issues.
- Further, we had applied to MoEF, New Delhi with a copy to your office with a request for modification/ updation/withdrawal of this conditions from our EC.
2. (xiii) Regular monitoring for SPM, SO<sub>2</sub> and NO<sub>x</sub> around the power plant may be carried out and records maintained.
- The ambient air quality is being monitored at seven locations regularly and data is submitted to Regional Office of MoEF&CC through half yearly EC compliance reports every year. The ambient air quality data monitored for the period Oct'19 to Mar'20 is enclosed.



2. (xiv) Full cooperation should be extended to the Scientists/Officers from the Regional Office of the Ministry at Bhubaneswar/the CPCB/the SPCB who would be monitoring the compliance of environmental status. Complete set of impact assessment report and the Management Plans should be forwarded to the Regional Office for their use during monitoring.
2. (xv) Adequate financial provision should be made for implementation of environmental protection measures indicating item-wise break-up and at least 1% of the cost of the project should be spent on improvement of ecology of the area. These costs should be included as a part of project cost. The funds earmarked for environmental protection measures should not be diverted for other purposes and year-wise expenditure should be reported to the Ministry.
2. (xvi) The Company, should strengthen its Environmental Group to ensure continuous study of various environmental issues in the region.
3. The Ministry of Environment & Forests or any other Competent Authority may modify / alter any of the stipulated condition(s) or stipulate any additional condition(s) in the interest of environment, which shall be complied with by the proponent. The Ministry reserves the right to revoke the clearance if conditions stipulated are not implemented to the satisfaction of the Ministry.

Environmental Impact Assessment & Management Plan have already been submitted to Bhubaneswar Regional office.

Provisions have been made to allocate the funds for controlling the Pollution Control Equipment and abating the Pollution every year. The actual environmental expenditure for the period Oct'19 to Mar'20 is enclosed.

Various studies on environmental issues in the region are being undertaken from time to time.

Agreed





4. The environmental clearance accorded shall be valid for a period of 5 years for commencement of construction / operation of the power plant. In case the project authorities fail to do so within this stipulated period, this environmental clearance shall stand lapsed automatically. Agreed
5. In case of any deviation or alternation in the project profile / scope of the project 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. In case of any alternation/deviation approval from the Ministry will be taken.
6. 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, Hazardous Wastes (Management & Handling) Rules, 1989 and its amendments, the Public Liability Insurance Act, 1991 and its amendments, the Environment Impact Assessment Notification of January, 1994 and its amendments. Agreed

*P. B. S.*



Name of the Project : AUGMENTATION OF CPP AT HIRAKUD FROM 77 MW TO 100 MW (UNIT - II)

Clearance No. & Date : J-13011/1/99-IA.II (T), dated 25<sup>th</sup> April, 2005

Compliance Period : October 2019 - March 2020

Sl No	Conditions	Compliance (as on 31 <sup>st</sup> March 2020)
2. (i)	All the conditions stipulated by Orissa Pollution Control Board vide their letter no. 10039/Ind-II-NOC-906 dated 27th May, 2003 should be strictly implemented.	All the condition stipulated by OSPCB are strictly implemented.
2(ii)	A stack of height of not less than 130 meters shall be provided with continuous online monitoring equipment.	A single stack of height 130 meters has been provided to the unit. Forbes Marshall-Codel make Opacity Monitor (Model No: DCEM-2100) and Continuous Flue gas Analyser of SO <sub>2</sub> , NO <sub>x</sub> and CO <sub>2</sub> (Model No: GCEM 4000) have been installed in the Stack.
2. (iii)	Electrostatic precipitators having efficiency of not less than 99.9% should be installed and it should be ensured that the particulate emission do not exceed the prescribed limit of 150 mg/Nm <sup>3</sup> .	High Frequency Rectifier Transformers (HFTRs) have been provided to the ESPs to keep the particulate matter (PM) emissions from the stack below 50 mg/ NM <sup>3</sup> , as stipulated by MoEF&CC/CPCB/OSPCB. The average PM value for the period Oct'19 to Mar'20 was 42.52 mg/NM <sup>3</sup> , which is far below the limit of 50 mg/NM <sup>3</sup> . The values are enclosed.
3	The Ministry of Environment & Forests or any other Competent Authority may modify / alter any of the stipulated condition(s) or stipulate any additional condition(s) in the interest of environment, which shall be complied with by the proponent. The Ministry reserves the right to revoke the clearance if conditions stipulated are not implemented to the satisfaction of the Ministry.	Agreed
4.	The environmental clearance accorded shall be valid for a period of 5 years for commencement of construction / operation of the power plant. In case the project	Agreed



authorities fail to do so within this stipulated period, this environmental clearance shall stand lapsed automatically.

- 5 In case of any deviation or alternation in the project profile / scope of the project 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. In case of any alternation/deviation approval from the Ministry will be taken.
- 6 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, Hazardous Wastes (Management & Handling) Rules, 1989 and its amendments, the Public Liability Insurance Act, 1991 and its amendments, the Environment Impact Assessment Notification of January, 1994 and its amendments. Agreed



## COMPLIANCE TO ENVIRONMENT CLEARANCE (EC) CONDITIONS

**Name of the Project** : CAPTIVE POWER PLANT OF INDAL AT HIRKUD (Unit - I)

**Clearance No. & Date** : J -13011/18/88-IA, dated 11<sup>th</sup> May 1989

**Compliance Period** : October 2019 - March 2020

Sl no	Condition	Compliance Status as on 31 <sup>st</sup> March 2020
2(i)	A single stack having minimum 130 meters height will be provided.	A single stack of height 130 meters has been provided to the unit.
2(ii)	Electrostatic precipitators [ESP's] having an operational efficiency of not less than 99.5% will be provided to keep the emission levels of the particulates within 150 mg/Nm <sup>3</sup> .	Two ESPs of efficiency more than 99.9% and with four electrical fields, have been provided to the boilers attached to the unit. The unit was under shut down for most of the time during the period Oct'19 to Mar'20 for lesser power demand by Smelter Plant. However, the average PM emission from ESP outlets of the unit for the period was 67.95 mg/NM <sup>3</sup> , which is far below the stipulated limit of 100 mg / NM <sup>3</sup> .
2(iii)	Dust suppressing/control equipment should be provided in the coal handling areas.	Fixed sprinklers, Rain Gun sprinklers have been provided to the coal yard for moistening of coal during handling. Mobile water tankers are used for sprinkling of water on the road around coal yard. Primary crusher houses of coal yard are fitted with dust suppression systems and the secondary crushers fitted with dust extraction systems with suction hoods & bag filter houses.
2(iv)	Liquid effluents emanating from the power station are treated to comply with the standards prescribed by the Central/State Pollution Control Board or under the Environment Protection Act, 1986, which ever are more stringent.	Cooling Tower blow downs of the plant is treated in a RO based ETP of capacity 120 m <sup>3</sup> /hr. Other effluents are collected in a Common Monitoring Basin and treated in the RO and is reused in the Cooling Towers, -house activities such as coal-yard spraying, road cleaning, water spraying at ash disposal area and gardening etc.
2(v)	Cooling towers will be provided	Has been provided to the unit



- 2(vi) Continuous monitoring of stacks and ambient air quality will be done at least at four different locations. The sites of these stations will be selected in consultation with State Pollution Control Board taking into consideration with the wind direction, human settlements and other local factors. Similarly monitoring facilities for liquid effluents may be provided.
- Continuous monitoring of ambient air and stacks is being done in all units of Power Plant with real time data transmission to the servers of SPCB and CPCB. Three online continuous monitoring stations have been installed in the Power Plant with online systems in all the stacks of the 467.5 MW plant.
- Apart from the above, monitoring of ambient air at 7 different locations and emission from all the stacks are being carried out by NABL accredited laboratories every month. The values for ambient air monitoring are enclosed.
- 2(vii) Adequate infrastructural facilities may be created for meeting the emergency situation arising due to fire hazards especially in the coal oil storage and handling areas.
- Necessary Fire fighting arrangements have been provided in Coal handling area, Coal yard and Oil storage and handling area.
- 2(viii) Adequate scrubbing system having an efficiency of not less than 90% efficiency for control of fluoride before the captive power plant comes on stream.
- Complied at our Smelter Plant
- 2 (ix) Disposal of fly ash on land should be done after making proper bunds/dykes. There should be no discharge of liquid effluents from ash bund/dyke. The liquid effluents if any should be recycled / reused. Efforts should be made to reuse utilize the fly ash for constructive purposes such as in making bricks, blocks, cement etc. to the extent possible.
- The disposal of Fly ash is being complied as per the conditions. There is no discharge of effluents to outside from Ash disposal area.
- Ash, after being supplied to various avenues of utilization, is disposed dry in the ash disposal area i.e Ash mound.
- About 4, 29, 722 MT of ash (from all the units) was utilized in different applications (Cement manufacturing, Bricks manufacturing, road making and low-lying area filling) during the period Oct'19 to Mar'20 with utilization 95.7% of generated ash. The detailed ash utilization is enclosed.
- To ensure 100% ash utilization, a detailed ash utilization program are in place.



- |      |  |   |
|------|--|---|
| 2(x) | A greenbelt of adequate density and width must be created all around the proposed power station and ash pond   | Afforestation and plantation is being taken on the Ash transport road, in and around Plant and ash mound area etc. About 6.86 lakh trees have been planted since 1993-94. About 8400 saplings have been planted during the year 2019-20. The details of plantation is enclosed. |
| 3    | Adequate Financial provisions must be provided in project cost and annual budgets for implementation of the conditions as stipulated above.  | Provisions have been made to allocate the funds for controlling the Pollution Control Equipment and abating the Pollution every year. The actual environmental expenditure for the period Oct'19 to Mar'20 is enclosed.   |
| 4    | The above conditions may be modified or the additional ones may be imposed, if required from environmental angle.  | Agreed  |
| 5    | Enforcement of the stipulated conditions will among others be under the provisions of Water (Prevention and Control of Pollution) Act, 1974, the Air (Prevention and Control of Pollution) act, 1981 and the Environment (Protection) Act, 1986. | Agreed  |

*Paul*





ANNEXURE - I

**ENVIRONMENTAL QUALITY PARAMETERS OF SMELTER**  
**(October-2019 TO March-2020)**

**STACK EMISSION FUME TREATMENT PLANT (DRY SCRUBBERS)**

**Particulate Matter: Standard: 100 mg/Nm<sup>3</sup> Total Fluoride: Standard: 0.3 Kg/MT. Al.**

Location of sampling	Unit	Oct'19	Nov'19	Dec'19	Jan'20	Feb'20	Mar'20
<b>FTP I - Stack I</b>							
Particulate Matter	mg/Nm <sup>3</sup>	17.2	9.6	12.7	11.4	10.6	11.2
Total Fluoride	Kg/t. Al.	0.06	0.11	0.16	0.12	0.13	0.13
Hydrocarbon	ppm		2.84	5.69	4.16	5.6	4.6
<b>FTP - I - Stack II</b>							
Particulate Matter	mg/Nm <sup>3</sup>	19.0	8.0	9.2	10.2	13.3	10.0
Total Fluoride	Kg/t. Al.	0.14	0.13	0.15	0.14	0.13	0.14
Hydrocarbon	ppm		2.96	6.26	5.11	6.8	5.6
<b>FTP - II - Stack - III</b>							
Particulate Matter	mg/Nm <sup>3</sup>	14.6	11.7	14.2	13.8	9.2	12.5
Total Fluoride	Kg/t. Al.	0.25	0.24	0.23	0.21	0.16	0.18
Hydrocarbon	ppm		3.34	4.10	6.17	5.9	5.4
<b>FTP - III- Stack - IV</b>							
Particulate Matter	mg/Nm <sup>3</sup>	11.0	12.1	12.4	14.7	12.1	9.5
Total Fluoride	Kg/t. Al.	0.12	0.09	0.12	0.19	0.14	0.12
Hydrocarbon	ppm		2.76	5.55	3.89	5.1	3.56
<b>FTP - IV- Stack - V</b>							
Particulate Matter	mg/Nm <sup>3</sup>	21.0	10.4	11.6	13.8	10.6	11.8
Total Fluoride	Kg/t. Al.	0.05	0.09	0.09	0.08	0.12	0.12
Hydrocarbon	ppm		2.34	6.67	6.4	7.3	2.88

**STACK EMISSION (Cast House & Caster)**

**Particulate Matter: Unit: mg/Nm<sup>3</sup> Standard: 100 mg/Nm<sup>3</sup>**

Sampling Location	Oct'19	Nov'19	Dec'19	Jan'20	Feb'20	Mar'20
<b>CAST HOUSE - I :</b>						
Stack-6 (Furnace - A)	47.5	33.4	28.0	16.0	17.0	37.8
Stack-7 (Furnace - B)	34.1	47.5	36.0	33.0	39.0	44.2
<b>CAST HOUSE - II, III, IV &amp; Caster (Stack No.9, 10, 11 &amp;12)</b>						
Stack - 9 (Furnace- 1&2)	51.3	36.1	30.0	48.0	44.0	41.5
Stack -10 (Furnace- A&B)	46.2	31.8	27.0	22.0	29.0	34.2
Stack -11 (Furnace- A&B)	58.6	43.5	49.0	32.0	37.0	47.6
Stack -12 (Furnace- A&B)	32.7	52.0	39.0	59.0	52.0	49.0

\*Stack-8 (Furnace -C) Shut Down.



**FUGITIVE EMISSION Total Fluoride: Unit: Kg/MT. Al.**  
**kg/MT.Al.**

**Standard: 0.4**

Location of sampling	Oct'19	Nov'19	Dec'19	Jan'20	Feb'20	Mar'20
PR-I, Section XII	0.29	0.27	0.29	0.31	0.33	0.30
PR-II, Section IV	0.30	0.29	0.28	0.29	0.31	0.32
PR-III, Section V	0.32	0.31	0.32	0.28	0.29	0.28
PR-IV, Section VIII	0.33	0.30	0.31	0.32	0.30	0.31
PR-V, Section IX&X	Shut down	Shut down	Shut down	Shut down	Shut down	Shut down
PR-VI,RS End	0.28	0.32	0.29	0.30	0.32	0.33
PR-VII,RS End	0.31	0.33	0.30	0.31	0.33	0.34
PR -VIII,RS End	0.32	0.31	0.33	0.34	0.34	0.33
PR- IX ,RS End	0.33	0.34	0.32	0.35	0.34	0.35
PR -X , RS End	0.34	0.35	0.34	0.34	0.35	0.33
PR -XI, RS End	0.30	0.29	0.28	0.29	0.30	0.31
80-POT Area (Middle)	0.30	0.31	0.30	0.32	0.31	0.29

**AMBIENT AIR SAMPLING**

**PARTICULATE MATTER (PM 10): Unit: µg/Nm3**

**Standard: 100 µg/Nm3 (24 hours)**

Location of sampling	Oct'19	Nov'19	Dec'19	Jan'20	Feb'20	Mar'20
Pump House Near Adm. Building	62.3	69.1	66.2	60.5	56.4	56.9
R/S Cooling Tower MCC Room	52.7	62.3	61.7	58.4	58.0	57.3
R&D Building	53.7	56.6	59.5	56.3	52.0	51.3
Near caster Security Kiosk	54.7	52.7	66.2	59.6	57.7	56.4
Near New Security watch tower	49.4	61.3	64.0	58.2	56.1	56.2
Project office near Old Rectifier	58.0	62.5	65.6	58.0	58.0	56.9
Hindalco club	48.1	53.0	55.4	54.6	55.9	56.1



**PARTICULATE MATTER (PM 2.5): Unit:  $\mu\text{g}/\text{Nm}^3$**

**Standard:  $60 \mu\text{g}/\text{Nm}^3$  (24 hours)**

Location of sampling	Oct'19	Nov'19	Dec'19	Jan'20	Feb'20	Mar'20
Pump House Near Adm. Building	32.1	35.6	33.7	31.5	29.4	30.0
R/S Cooling Tower MCC Room	27.3	31.8	31.4	30.3	29.8	29.8
R&D Building	27.7	29.1	30.4	29.4	27.1	27.2
Near caster Security Kiosk	28.7	27.5	34.7	30.7	29.7	30.0
Near New Security watch tower	25.9	31.8	33.4	29.9	28.8	29.0
Project office near Old Rectifier	29.8	32.5	33.9	29.8	29.6	30.6
Hindalco club	25.0	27.3	28.6	28.0	28.8	30.2

**SULPHUR DI-OXIDE (SO<sub>2</sub>): Unit:  $\mu\text{g}/\text{Nm}^3$   
hours)**

**Standard:  $80 \mu\text{g}/\text{Nm}^3$  (24 hours)**

Location of sampling	Oct'19	Nov'19	Dec'19	Jan'20	Feb'20	Mar'20
Pump House Near Adm. Building	11.1	12.1	12.9	12.2	11.8	12.1
R/S Cooling Tower MCC Room	6.2	7.1	11.4	11.2	11.2	10.8
R&D Building	7.0	8.0	8.6	9.1	8.7	8.4
Near caster Security Kiosk	9.8	5.9	10.6	11.6	11.4	11.1
Near New Security watch tower	5.1	10.5	11.5	11.5	11.2	11.2
Project office near Old Rectifier	9.0	10.2	11.4	11.7	11.9	11.8
Hindalco club	5.5	5.4	6.1	6.2	6.0	5.8

**NITROGEN OXIDE (NO<sub>x</sub>): Unit:  $\mu\text{g}/\text{Nm}^3$**

**Standard:  $80 \mu\text{g}/\text{Nm}^3$  (24 hours)**

Location of sampling	Oct'19	Nov'19	Dec'19	Jan'20	Feb'20	Mar'20
Pump House Near Adm. Building	14.1	15.3	16.8	16.0	15.2	15.3
R/S Cooling Tower MCC Room	13.2	14.6	16.2	15.3	15.0	14.6
R&D Building	12.9	14.2	16.3	15.4	14.4	14.0
Near caster Security Kiosk	12.8	13.9	15.1	15.3	14.8	14.2
Near New Security watch tower	11.3	14.2	14.6	14.8	14.4	14.3
Project office near Old Rectifier	13.2	13.3	14.5	15.1	15.6	15.5
Hindalco club	11.9	12.5	13.3	14.2	14.4	13.9



**CARBON MONOXIDE (CO):** Unit:  $\mu\text{g}/\text{Nm}^3$   
(hours)

Standard:  $2000 \mu\text{g}/\text{Nm}^3$  (8 hours)

Location of sampling	Oct'19	Nov'19	Dec'19	Jan'20	Feb'20	Mar'20
Pump House Near Adm. Building	180.0	200.0	240.0	230.0	210.0	210.0
R/S Cooling Tower MCC Room	140.0	170.0	220.0	200.0	190.0	190.0
R&D Building	140.0	150.0	170.0	150.0	150.0	150.0
Near caster Security Kiosk	160.0	150.0	250.0	230.0	200.0	200.0
Near New Security watch tower	120.1	180.0	190.0	210.0	200.0	200.0
Project office near Old Rectifier	190.0	210.0	230.0	200.0	200.0	210.0
Hindalco club	140.0	BDL	BDL	BDL	BDL	BDL

**Note:** Hydro-Carbon (HC) and Lead in all seven locations are Not Detectable (ND).

**FORAGE FLUORIDE:** Unit: ppm  
ppm

Monthly Average Standard: 80

Sl. No.	Location	Data					
		Oct'19	Nov'19	Dec'19	Jan'20	Feb'20	Mar'20
1	0.5 km NE	34.05	33.45	33.10	34.70	34.00	31.50
2	1.0 km NE	23.85	24.35	24.00	25.20	22.00	20.50
3	2.0 km NE	22.85	21.15	20.80	20.80	17.50	19.00
4	3.0 km NE	18.85	18.75	18.40	18.20	16.00	17.00
5	0.5 km SE	31.45	31.95	31.60	32.20	31.50	33.50
6	1.0 km SE	29.10	23.25	22.90	19.700	23.50	27.50
7	2.0 km SE	20.95	18.55	18.20	17.70	18.00	19.50
8	3.0 km SE	17.90	15.95	15.60	16.70	14.50	14.50
9	5.0 km SE	9.90	8.20	7.85	7.70	8.00	9.50
10	0.5 km NW	19.90	21.55	21.20	20.70	25.50	22.00
11	1.0 km NW	18.50	20.60	20.25	18.70	23.05	20.50
12	0.5 km SW	29.30	24.20	23.85	22.70	20.00	26.50
	Average Month	<b>23.05</b>	<b>21.83</b>	<b>21.48</b>	<b>21.25</b>	<b>21.13</b>	<b>21.79</b>



**GROUND WATER ANALYSIS: Parameter: F- Unit: mg/l**

Location of sampling	Oct'19	Nov'19	Dec'19	Jan'20	Feb'20	Mar'20
Sludge pit test well (E)	0.41	0.41	0.42	0.46	0.49	0.52
Sludge pit test well(W)	0.55	0.58	0.60	0.65	0.61	0.65
Sludge pit test well (N)	0.39	0.40	0.41	0.37	0.39	0.32
Sludge pit test well (S)	0.44	0.45	0.47	0.50	0.46	0.38
Open well near sludge pit	0.36	0.37	0.37	0.38	0.39	0.38
Tube well near sludge pit	0.28	0.28	0.29	0.29	0.28	0.29

**WATER ANALYSIS:**

(a) The treated water quality after treatment in the Effluent Treatment Plant (ETP outlet) was monitored. The values were as follows:

(i) **ETP (R&D back side) 250 KLD**

SL. NO.	Parameter	Unit	Limit	Value Outlet of ETP					
				Oct'19	Nov'19	Dec'19	Jan'20	Feb'20	Mar'20
1	pH	-	6.5-9.0	7.45	6.16	6.19	6.52	6.32	6.90
2	TSS	mg/L	100	2.7	BDL	BDL	BDL	BDL	12.0
3	TDS	mg/L	2100	12.0	13.0	11.0	15.0	12.9	37.0
4	Fluoride	mg/L	2.0	0.30	0.24	1.1	1.8	1.4	0.20
5	OIL & GREASE	mg/L	10.0	BDL	BDL	BDL	BDL	BDL	BDL
6	BOD	mg/L	30	BDL	BDL	2.9	BDL	BDL	BDL
7	COD	mg/L	250	BDL	BDL	12.0	BDL	BDL	BDL
8	Chromium hexavalent	mg/L	0.1	BDL	BDL	BDL	BDL	BDL	BDL
9	Cyanide	mg/L	0.2	BDL	BDL	BDL	BDL	BDL	BDL
10	Free ammonia	mg/L	5.0	0.37	0.32	BDL	BDL	BDL	0.30
11	Total Nitrogen	mg/L	100	2.5	2.1	0.34	0.28	0.39	2.2
12	Total Chromium	mg/L	2.0	0.6	BDL	BDL	BDL	BDL	BDL

**(ii) ETP (CPP side) 250 KLD**

SL. NO	Parameter	Unit	Limit	Value Outlet of ETP					
				Oct'19	Nov'19	Dec'19	Jan'20	Feb'20	Mar'20
1	pH	-	6.5-9.0	6.92	7.44	6.26	7.58	7.66	7.0
2	TSS	mg/L	100	BDL	3.4	7.8	BDL	18.0	9.0
3	TDS	mg/L	2100	46.0	104.0	16.0	28.0	128.0	54.0
4	Fluoride	mg/L	2.0	0.29	0.12	0.43	0.52	1.3	0.16
5	OIL & GREASE	mg/L	10.0	BDL	BDL	BDL	BDL	BDL	BDL
6	BOD	mg/L	30	BDL	3.8	4.8	BDL	BDL	4.2
7	COD	mg/L	250	BDL	12.0	17.0	BDL	BDL	16.0
8	Chromium hexavalent	mg/L	0.1	BDL	BDL	BDL	BDL	BDL	BDL
9	Cyanide	mg/L	0.2	BDL	BDL	BDL	BDL	BDL	BDL
10	Free ammonia	mg/L	5.0	0.14	0.18	BDL	BDL	BDL	0.14
11	Total Nitrogen	mg/L	100	1.6	1.4	0.63	0.71	0.54	1.0
12	Total Chromium	mg/L	2.0	BDL	BDL	BDL	BDL	BDL	BDL

**(iii) ETP (80 Pot Area) 50 KLD**

SL. NO	Parameter	Unit	Limit	Value Outlet of ETP					
				Oct'19	Nov'19	Dec'19	Jan'20	Feb'20	Mar'20
1	pH	-	6.5-9.0	6.76	7.25	7.32	7.51	6.74	7.5
2	TSS	mg/L	100	BDL	BDL	BDL	BDL	11.0	6.0
3	TDS	mg/L	2100	9.0	33.0	19.0	69.0	17.6	31.0
4	Fluoride	mg/L	2.0	0.13	0.16	0.20	0.40	0.90	0.12
5	OIL & GREASE	mg/L	10.0	BDL	BDL	BDL	BDL	BDL	BDL
6	BOD	mg/L	30	BDL	BDL	BDL	BDL	BDL	BDL
7	COD	mg/L	250	BDL	BDL	8.0	5.0	BDL	BDL
8	Chromium hexavalent	mg/L	0.1	BDL	BDL	BDL	BDL	BDL	BDL
9	Cyanide	mg/L	0.2	BDL	BDL	BDL	BDL	BDL	BDL
10	Free ammonia	mg/L	5.0	0.12	0.11	0.9	BDL	BDL	0.14
11	Total Nitrogen	mg/L	100	1.3	1.2	0.48	0.54	1.2	1.0
12	Total Chromium	mg/L	2.0	BDL	BDL	BDL	BDL	BDL	BDL





(b) Domestic effluent after treatment in Sewage Treatment Plant (STP Outlet) was monitored.

The values were as follows:

(iv) Plant STP (CPP side) 500 KLD

SL. NO	Parameter	Unit	Limit	Value Domestic Effluent Outlet of STP					
				Oct'19	Nov'19	Dec'19	Jan'20	Feb'20	Mar'20
1	pH	-	6.5-9.0	6.49	6.83	6.08	6.82	6.65	7.8
2	TSS	mg/L	100.0	BDL	4.6	12.0	14.0	4.0	23.6
3	BOD	mg/L	30	2.4	BDL	3.4	5.5	2.2	4.8
4	Fecal Coliform(FC)	Mpn / 100 ml	1000 (max)	790.0	921.0	260	540	450	965

(v) Plant STP(CPP side) 300 KLD

SL. NO	Parameter	Unit	Limit	Value Domestic Effluent Outlet of STP					
				Oct'19	Nov'19	Dec'19	Jan'20	Feb'20	Mar'20
1	pH	-	6.5-9.0	6.31	7.04	6.68	7.13	7.47	6.6
2	TSS	mg/L	100.0	29.0	5.1	8.0	23.0	4.0	25.8
3	BOD	mg/L	30	7.2	4.2	3.1	4.4	8.0	10.6
4	Fecal Coliform(FC)	Mpn / 100 ml	1000 (max)	180.0	670.0	700	640	870	876

(vi) Plant STP(80 Pot area) 100 KLD

SL. NO	Parameter	Unit	Limit	Value Domestic Effluent Outlet of STP					
				Oct'19	Nov'19	Dec'19	Jan'20	Feb'20	Mar'20
1	pH	-	6.5-9.0	7.20	7.69	7.57	7.79	7.55	7.1
2	TSS	mg/L	100.0	2.9	3.2	9.6	27.0	38.0	43.2
3	BOD	mg/L	30	4.0	BDL	3.6	6.0	10.0	7.0
4	Fecal Coliform(FC)	Mpn / 100 ml	1000 (max)	270.0	190.0	690	340	780	790

(vii) Colony STP(Main Colony) 400 KLD

SL. NO	Parameter	Unit	Limit	Value Domestic Effluent Outlet of STP					
				Oct'19	Nov'19	Dec'19	Jan'20	Feb'20	Mar'20
1	pH	-	6.5-9.0	6.77	6.81	6.62	6.98	6.69	6.9
2	TSS	mg/L	100.0	18.0	8.0	16.0	18.0	16.0	28.0
3	BOD	mg/L	30	15.0	4.0	9.7	3.1	7.0	8.0
4	Fecal Coliform(FC)	Mpn / 100 ml	1000 (max)	470.0	280.0	580	590	930	580

**ANNEXURE - II****STACK EMISSION**  
**(October' 2019 to March' 2020)****Unit # I**

Process attached to the unit : Boiler # 1 &amp; 2

<b>Sl. No.</b>	<b>Month / Year</b>	<b>Unit</b>	<b>PM</b>	<b>SO<sub>2</sub></b>	<b>NO<sub>x</sub></b>	<b>Hg</b>
01.	October	mg / NM <sup>3</sup>	The unit was under shut down (SD)			
02.	November	mg / NM <sup>3</sup>	The unit was under shut down (SD)			
03.	December	mg / NM <sup>3</sup>	The unit was under shut down (SD)			
04.	January	mg / NM <sup>3</sup>	The unit was under shut down (SD)			
05.	February	mg / NM <sup>3</sup>	67.95	430.15	180.9	0.0061
06.	March	mg / NM <sup>3</sup>	The unit was under shut down (SD)			
<b>Average</b>		mg / NM <sup>3</sup>	67.95	430.15	180.9	0.0061
<b>Standard</b>		mg / NM <sup>3</sup>	100	600	600	--



**STACK EMISSION**  
**(October' 2019 to March' 2020)**

**Unit # II**

Process attached to the unit : Boiler # 3, 4 & 5

<b>Sl. No.</b>	<b>Month / Year</b>	<b>Unit</b>	<b>PM</b>	<b>SO<sub>2</sub></b>	<b>NO<sub>x</sub></b>	<b>Hg</b>
01.	October	mg / NM <sup>3</sup>	43.30	403.5	161.38	0.0057
02.	November	mg / NM <sup>3</sup>	43.30	407.0	173.95	0.0052
03.	December	mg / NM <sup>3</sup>	43.43	414.2	172.60	0.0056
04.	January	mg / NM <sup>3</sup>	41.95	396.4	160.40	0.0055
05.	February	mg / NM <sup>3</sup>	42.15	394.4	165.93	0.0056
06.	March	mg / NM <sup>3</sup>	40.98	401.2	165.73	0.0056
	<b>Average</b>	mg / NM <sup>3</sup>	42.52	42.52	166.67	0.0055
	<b>Standard</b>	mg / NM <sup>3</sup>	50	600	300	0.03



**STACK EMISSION**  
**(October' 2019 to March' 2020)**

**Unit # III**

Process attached to the unit : Boiler # 6, 7 & 8

Sl. No.	Month / Year	Unit	PM	SO <sub>2</sub>	NO <sub>x</sub>	Hg
01.	October	mg / NM <sup>3</sup>	44.12	403.28	162.25	0.0049
02.	November	mg / NM <sup>3</sup>	43.98	393.75	158.33	0.0047
03.	December	mg / NM <sup>3</sup>	42.83	413.00	169.65	0.0055
04.	January	mg / NM <sup>3</sup>	42.02	396.40	159.27	0.0052
05.	February	mg / NM <sup>3</sup>	42.25	408.38	166.55	0.0056
06.	March	mg / NM <sup>3</sup>	41.90	433.05	177.95	0.0059
<b>Average</b>		mg / NM <sup>3</sup>	42.85	407.98	165.67	0.0053
<b>Standard</b>		mg / NM <sup>3</sup>	50	600	300	0.03



**STACK EMISSION**  
**(October' 2019 to March' 2020)**

**Unit # IV**

Process attached to the unit : Boiler # 9, 10 & 11

<b>Sl. No.</b>	<b>Month / Year</b>	<b>Unit</b>	<b>PM</b>	<b>SO<sub>2</sub></b>	<b>NO<sub>x</sub></b>	<b>Hg</b>
01.	October	mg / NM <sup>3</sup>	43.43	411.73	170.43	0.0054
02.	November	mg / NM <sup>3</sup>	43.57	404.82	169.15	0.0052
03.	December	mg / NM <sup>3</sup>	44.07	401.00	165.18	0.0056
04.	January	mg / NM <sup>3</sup>	40.72	393.07	159.95	0.0054
05.	February	mg / NM <sup>3</sup>	39.12	386.33	158.28	0.0052
06.	March	mg / NM <sup>3</sup>	40.57	393.10	163.15	0.0057
<b>Average</b>		mg / NM <sup>3</sup>	41.91	398.34	164.36	0.0054
<b>Standard</b>		mg / NM <sup>3</sup>	50	600	300	0.03



**STACK EMISSION**  
**(October' 2019 to March' 2020)**

**Unit # V**

Process attached to the unit : Boiler # 12 & 13

<b>Sl. No.</b>	<b>Month / Year</b>	<b>Unit</b>	<b>PM</b>	<b>SO<sub>2</sub></b>	<b>NO<sub>x</sub></b>	<b>Hg</b>
01.	October	mg / NM <sup>3</sup>	44.25	376.18	163.85	0.0055
02.	November	mg / NM <sup>3</sup>	42.88	364.73	158.95	0.0051
03.	December	mg / NM <sup>3</sup>	43.75	372.70	162.33	0.0055
04.	January	mg / NM <sup>3</sup>	42.58	378.35	169.00	0.0058
05.	February	mg / NM <sup>3</sup>	40.88	368.30	163.38	0.0058
06.	March	mg / NM <sup>3</sup>	41.28	366.75	159.73	0.0057
<b>Average</b>		mg / NM <sup>3</sup>	42.60	371.17	162.87	0.0055
<b>Standard</b>		mg / NM <sup>3</sup>	50	600	300	0.03







**AMBIENT AIR MONITORING, (CPP)**  
**(October' 2019 to March' 2020)**

**PARTICULATE MATTER 10 (PM<sub>10</sub>) :** **Limit : 100.00 µg / m<sup>3</sup>**

<b>Location</b>	<b>Oct - 2019</b>	<b>Nov - 2019</b>	<b>Dec - 2019</b>	<b>Jan- 2020</b>	<b>Feb - 2020</b>	<b>Mar - 2020</b>
FHP Control Room Top	63.0	70.0	74.0	73.0	65.0	69.0
120° NNE (Near Hindalco Admn. Building)	60.0	68.0	71.0	67.0	61.0	56.0
240° SSE (Rajapada village)	53.0	59.0	66.0	62.0	57.0	54.0
360° W (Hindalco Club)	59.0	64.0	69.0	64.0	58.0	60.0
Jyoti Vihar, Burla	51.0	58.0	65.0	61.0	55.0	52.0
Ash Mound Road	77.0	83.0	92.0	83.0	78.0	72.0
Ash Mound area	72.0	79.0	87.0	74.0	69.0	--

**SULPHUR DI-OXIDE (SO<sub>2</sub>) :** **Limit : 80.00 µg / m<sup>3</sup>**

<b>Location</b>	<b>Oct - 2019</b>	<b>Nov - 2019</b>	<b>Dec - 2019</b>	<b>Jan- 2020</b>	<b>Feb - 2020</b>	<b>Mar - 2020</b>
FHP Control Room Top	12.4	14.2	15.7	13.8	14.4	15.3
120° NNE (Near Hindalco Admn. Building)	11.8	13.2	14.6	14.1	13.6	12.8
240° SSE (Rajapada village)	10.7	11.3	13.2	14.2	14.5	13.7
360° W (Hindalco Club)	9.4	10.2	11.6	12.7	12.4	12.6
Jyoti Vihar, Burla	9.6	10.7	12.0	12.5	12.1	11.8
Ash Mound Road	10.3	12.3	14.6	13.8	15.3	16.4
Ash Mound area	10.5	12.7	17.3	15.7	16.1	--



**NITROGEN OXIDE (NO<sub>x</sub>)** : **Limit : 80.00 µg / m<sup>3</sup>**

<b>Location</b>	<b>Oct - 2019</b>	<b>Nov - 2019</b>	<b>Dec - 2019</b>	<b>Jan- 2020</b>	<b>Feb - 2020</b>	<b>Mar - 2020</b>
FHP Control Room Top	10.7	11.7	12.3	11.6	12.5	13.1
120° NNE (Near Hindalco Admn. Building)	15.2	14.8	16.2	15.4	14.8	14.3
240° SSE (Rajapada village)	12.5	14.4	17.1	18.6	16.4	15.6
360° W (Hindalco Club)	13.1	14.0	16.5	17.1	16.7	16.1
Jyoti Vihar, Burla	14.5	16.3	18.2	19.2	17.6	16.4
Ash Mound Road	13.8	15.2	17.5	18.3	18.5	19.2
Ash Mound area	12.4	14.8	20.1	19.7	19.4	--

**PARTICULATE MATTER 2.5 (PM<sub>2.5</sub>)** : **Limit : 60.00 µg / m<sup>3</sup>**

<b>Location</b>	<b>Oct - 2019</b>	<b>Nov - 2019</b>	<b>Dec - 2019</b>	<b>Jan- 2020</b>	<b>Feb - 2020</b>	<b>Mar - 2020</b>
FHP Control Room Top	32.0	37.0	38.2	39.2	35.5	37.7
120° NNE (Near Hindalco Admn. Building)	31.0	35.0	36.7	35.3	33.4	31.4
240° SSE (Rajapada village)	28.0	31.0	34.4	33.0	31.8	29.5
360° W (Hindalco Club)	31.5	33.5	36.3	34.2	32.0	31.8
Jyoti Vihar, Burla	26.2	30.0	33.7	31.5	29.8	27.6
Ash Mound Road	39.5	42.5	48.3	44.8	43.5	39.7
Ash Mound area	37.0	41.2	45.7	39.6	38.8	--



**STATUS OF UTILISATION OF FLY ASH AND BOTTOM ASH**  
**((October' 2019 to March' 2020))**

<b>Sl. No</b>	<b>Description</b>	<b>Quantity</b>
1	Quantity of fly ash generated (MT)	404858
2	Quantity of bottom ash generated (MT)	44984
	<b>Total ash generated (MT)</b>	449842
3	Supply to Brick Manufacturing Units (MT)	223073
4	Supply to Cement Plants (MT)	84729
5	Land Filling (MT)	44892
6	Utilization in Embankment / Dyke Raising (MT)	0
7	Utilization in other purposes (MT) (road making etc)	77029
	<b>Total Ash Utilized (MT)</b>	429722
8	% of total ash utilization	95.7



## PLANTATION DETAILS

YEAR	NO. OF SAPLINGS PLANTED	AREA COVERED (ACRE)	SPECIES PLANTED
Up to 2006 – 07	419865	250.12	
2007 – 08	33,000	12.0	Chakunda, Gambhari, Sisam, Krushna Chuda, Radha Chuda, Jammun & Neam
2008 – 09	25,200	16.0	Chakunda, Gambhari, Sisam, Krushna Chuda, Radha Chuda, Jammun & Neam
2009 – 10	31,000	10.0	Chakunda, Gambhari, Sisam, Krushna Chuda, Radha Chuda, Jammun & Neam
2010 – 11	30,000	10.0	Chakunda, Gambhari, Sisam, Krushna Chuda, Radha Chuda, Jammun & Neam
2011 – 12	25,200	10.0	Chakunda, Gambhari, Sisam, Krushna Chuda, Radha Chuda, Jammun & Neam
2012 – 13	25000	10.0	Neam, Karanja, Sisam, Krushna Chuda, Radha Chuda, Cassia Fistula, Alstonia & Kadamba
2013 – 14	30000	13.0	Neem, Karanja, Sisam, Cassia Fistula, Alstonia, Kadamba, Mango, Jamun etc
2014 – 15	12000	6.0	Neem, Karanja, Sisam, Cassia Fistula, Alstonia, Kadamba, Mango, Jamun etc
2015 – 16	10000	5.0	Bamboo, Sisoo, Karanja, Alstonia, Chhatiana, Mango, Jamun etc
2016 – 17	21175	10.6	Bamboo, Ficus, Alstonia, Champa, Plumeria Alva etc
2017 – 18	13500	6.75	Krushnachuda, Radhachuda, Acassia, Ficus, Jamun, Arjun, Ashok etc
2018 - 19	10500	5.25	Bamboo, Sisam, Cassia Fistula, Alstonia, Kadamba, Mango, Jamun
2019 - 20	8400	4.2	Alstonia, Champa Bamboo, Sisam, Alstonia, Kadamba, Mango, Jamun
<b>Total</b>	<b>686440</b>	<b>368.92*</b>	

\* Including replenished area



**ENVIRONMENTAL EXPENDITURE**  
**(October' 2019 to March' 2020)**

01.	Ash Disposal	:	Rs.	987.65	Lakh
02.	Operating & Maintenance cost of ESP, Ash Handling Plant including Ash Silo & CHP DES	:	Rs.	85.8	Lakh
03.	Envt. Monitoring / Evt. Charges including Environment Management System and water cess	:	Rs.	35.86	Lakh
04.	Plantation Activities	:	Rs.	22.31	Lakh
05.	Aesthetics	:	Rs.	165.81	Lakh
06.	Community Development (Hirakud complex)	:	Rs.	159.11	Lakh
	<b>TOTAL</b>	:	Rs.	<b>1456.54</b>	Lakh



**SULPHUR CONTENT IN FED COAL**  
**(October' 2019 to March' 2020)**

<b>Sl. No.</b>	<b>Month</b>	<b>Unit</b>	<b>Results</b>
01.	October	%	0.40
02.	November	%	0.40
03.	December	%	0.42
04.	January	%	0.40
05.	February	%	0.41
06.	March	%	0.40
<b>Average</b>		%	<b>0.40</b>



**AMBIENT NOISE QUALITY DATA (CPP)**  
**(October' 2019 to March' 2020)**

Sl. No.	Location	Category	Standard* Day / Night	Distance / Direction w.r.t Plant	Noise Level (Day/Night) in dB(A)					
					Oct - 2019	Nov - 2019	Dec - 2019	Jan- 2020	Feb - 2020	Mar - 2020
1.	Riverside Colony	Residential	55/45	0.8 km / SW	49.1/42.5	50.87/43.3	50.20/44.8	49.55/42.7	49.58/43.0	49.35/44.3
2.	Tarasinghpada	Residential	55/45	0.2 km / S	54.77/49.5	52.15/44.2	49.72/45.3	49.85/46.2	49.85/46.2	48.25/45.7
3.	Christianpada	Residential	55/45	0.1 km / S	53.77/48.3	49.47/42.0	49.15/47.4	47.68/40.4	47.73/42.5	48.93/43.1
4.	Power Plant Security Gate	Industrial	75/70	Plant Site	57.22/51.4	57.90/53.5	56.30/52.7	56.30/51.7	54.70/50.4	54.55/49.6
5.	Power Colony	Residential	55/45	0.4 km / NW	50.85/44.2	51.45/41.7	52.07/43.3	49.53/42.6	49.30/44.3	49.70/46.2

\* Day Time : 0600 to 2200 Hrs      \* Night Time : 2200 to 0600 Hrs.



## CSR 3<sup>rd</sup> QUARTERLY REPORT OCT – DEC 2019-20

### Education

#### 1. Children's day celebration:



“Children's Day”, a day dedicated to the children is observed as an event across the country to celebrate childhood and promote awareness about children's welfare. Children's Day is a day for children to be engaged in fun and frolic. As a part of our CSR initiatives we have conducted drawing and debate competition for the nearby school children. Invited judges have evaluated the performance of the students and prizes were awarded to the winners by our senior officers. In the closing ceremony of the programme our senior officers advised the children to be sincere in their studies and pay respect to their seniors to make themselves good citizens in future. A team of our DETs attended the programme to volunteer their supports towards the social cause.

#### 2. School Bag Support for Primary School Students:



As a part of our Corporate Social Responsibility programme we have distributed school bags to the primary school students studying in different schools in rural areas near our plant periphery to encourage. A total of 600 students have directly got benefitted through the programme that covered 11 primary schools situated in the periphery of HiraKud.

### 3. Desk Bench Support to Periphery Schools

We have provided 120 pair desk bench to 7 Schools at Hirakud for the development of Education

## Health care:

### 4. Free Specialist OPD Clinic at Govt Hospital Hirakud:

As part of our Specialised Medical service programme for the community people, we are running an OPD clinic at Govt Hospital Hirakud. During this qtr a total of 384 patients have availed the services of the Specialist Doctors of Medicine and Cardiology from Burla.

### 5. Immunisation Programmes:

We have been providing logistic support to the Govt. Hospital, Hirakud for extending the immunization programme to the nearby rural areas. During this qtr a total 609 babies were covered under the programme.

### 6. Family Planning Camp



Under our family planning support programme, we extend our logistic supports to Govt. Hospital, Hirakud for organising sterilization camps from time to time. This qtr a camp was organised at Govt. Hospital, Hirakud in which all necessary supports including nutritional food kit to operatees were provided by us to make the programme successful. A total of 24 cases were operated during this camp.

**7. Mega Blood Donation Camp:**



We have organized a mega blood donation camp on 1st October 2019 partnering with our Medical Dept at our community center. In this camp 316 donors from our Plant as well as from community donated their blood voluntarily. This program was inaugurated by Mr. R. k. Gupta, Head of Sambalpur Cluster wherein senior executives of the company attended and donated their blood. This has been organized on the eve of the day before of the Birthday of two legends, Mahatma Gandhi and Lala Bahadur Sastri. This Camp witnessed the huge gathering and participation of Women Committee, members of Labour Unions, Medical Staff, youth workers, contract laborers union and the members of the CSR & HR Dept. of the company.

**8. Cataract Screening & Operation Camp:**



We have organized cataract screening / operation camps for the rural poor people of nearby areas. The screening tests were organized at Hirakud & Larpanka. During the camps a total of 69 patients have registered for screening and out of them 25 patients have undergone with cataract operation in two batches. The operations were done at VIMSAR Hospital, Burla by a team of Specialist Eye surgeons. We have extended all necessary supports for the programme. Post operation care and Eye check up at VIMSAR Burla was also arranged by us.

**9. Mega Health Camp & Sickling Detection Camp:**



In association with The Samaj Daily and Lok Sevak Mandal of Sambalpur a Mega Health cum Blood Sickling detection camp was organised at Mahammdpur High School campus on 2<sup>nd</sup> October 2019 on the occasion of Gandhi Jayanti and 100 years completion of the Daily Samaj. During the Camp reputed Specialist from different branches like Medicine, Pediatrics, Skin, Surgery, Eye, O&G and ENT rendered their services in the camp. Blood tests were also conducted for detection of Sickling and Diabetes. The Camp was inaugurated by our Cluster Head along with other senior officials of Hindalco and the officials of Samaj and Lok Sevk Mandal. A total of 741 patients have availed health care service during the camp along with free medicines. In the camp 402 patients get consultation from different Specialist Doctors, 108 patients were examined for sickling , 116 patients for Blood pressure and 115 patients for diabetes. The entire programme was coordinated by the staff of CSR Dept.

**10. Tarpaulin was provided to Govt Hospital Hirakud .**

**11. Installation of Tube wells at Community places.**

## Sustainable Livelihood

### 12. Tailoring Training centers:



Viswakrama Puja was celebrated by the trainees in all the three tailoring training centers at Gadmunda, Larpanka and Hirakud. These centers were continuing to provide tailoring training to 68 unemployed girls, and SHG members.

### 13. Mushroom Cultivation Support to Farmers:



We have promoted a youths from near by village to take up independent livelihood project under our CSR initiatives. We have provided him with the infrastructure materials to expand his shed so that he can expand and will be able to earn a good amount for his family as well as, a source of inspiration for the unemployed youths. After getting support from us he has started the production in a large scale and will earn a good amount from this project.

**14. Horticulture Support for Farmers:**



Agriculture and Horticulture are one of the primary occupations of the people belonging to this locality. As a part of our Sustainable livelihood programme we are organizing various agricultural & Horticultural support programmes for the rural farmers and SHG members belonging to our periphery villages. We are promoting vegetable cultivation, Mushroom Cultivation and other training activities. We are also promoting for formation of Farmers club for the development of Agriculture. We have planned to distribute vegetable seeds to the needy women SHG members and members of farmers club, involved in large scale vegetable cultivation which will help in increasing their income.

**15. SHG Empowerment Programme:**



Empowerment of women plays a crucial role to change the fortune of a community and improve the quality of life of the people. Under our Sustainable livelihood activities we have involved in formation of SHGs and providing them training and bank linkage support for doing Income generation projects. A numbers of SHG members are involved in Income generation activities like Phenyl preparation, Paper Packet making, Chhatua & Condiments preparation, and farming activities.

## Infrastructure Development

16. Village Temple development
17. Dengimachha Primary Health Center Colouring
18. Development of Sambalpur Stadium.

## Social Causes

19. Support for Sports programmes.
20. Financial Assistance for Cultural and Festival Programmes.
21. Support to Sir Isac Santra Bal Niketan at Sambalpur.

### **22. Rangoli Competition among Women SHG members:**

To promote the cultural activities as well as to uphold our old traditional culture, we have organized a rangoli competition among SHG members on the occasion of Kartik Purnima. 40 women from different SHG's participated in this programme. The rangolis were evaluated by judges and Prizes were distributed to the winners by the guests at the end of the competition. The DETs have participated in this programme and have coordinated for the smooth conduct of the programme.



## CSR 4<sup>th</sup> QUARTERLY REPORT JANUARY-MARCH 2019-20

### Education

#### 1. Science laboratories at High Schools:



To make learning science more easy and interesting, we have set up Science Laboratories in 3 High Schools at Hirakud. These laboratories will function with Science Models to provide a complete demonstration to the High School students during their science classes. STEM India Foundation a leading foundation of Mumbai with all India network has partnered with us to make the programme successful. Orientation training programmes for science teachers of these schools have also been completed and the laboratories are now full fledge capable to function for the students.

2. We have supported for organizing Annual Sports of Hirakud College.
3. To promote the science education we have extended our support for organizing Block level Science Exhibition.

#### 4. Gadmunda Cluster Level School Sports Meet:



Gadmunda Cluster Level School Annual Sports meet 2019-20 was organised with our support, at the Nua Dengimacha UPS playground on 21<sup>st</sup> Jan 2020. Students from 10 schools of Gadmunda cluster have participated in the meet. This has brought students from all the school to compete among themselves with sportsman spirit. Our entire team was present during the day to coordinate each and every activities. Our HR Head Mr. Krishna Padhi, was the chief guest of the function who declared the sports open. Our GM-ER also joined as Guest of Honour in the inaugural Function. In the closing ceremony Mr. Anish Aind DH-IR and Dy. Manager CSR were present as guest, who gave away the prizes to the winners along with other dignitaries present during the function. Teachers from all the schools along with their support staffs were also present to help in the successful completion of the programme.

#### Health care:

##### 5. Free Specialist OPD Clinic at Govt Hospital Hirakud:

As part of our Specialised Medical service programme for the community people, we are running an OPD clinic at Govt Hospital Hirakud. During this qtr a total of 347 patients have availed the services of the Specialist Doctors of Medicine and Cardiology from Burla.

#### 6. Immunisation Programmes:

We have been providing logistic support to the Govt. Hospital, Hirakud for extending the immunization programme to the nearby rural areas. During this qtr a total 537 babies were covered under the programme.

#### 7. Pulse Polio Rally & Immunisation Programme:



The Pulse Polio immunization programme was conducted at 24 booths under HiraKud Govt. Hospital. All necessary supports were provided by us to make the programme successful. On the subsequent two days door-to-door campaign was organized, to identify the left out children and administer oral dose. Through the 24 booths a total of 3694 babies were given oral polio dose. Before the immunization day an awareness rally was organised with the school students to create awareness among public for making a Polio free society, in which Hospital staffs, ASHA workers and our staffs also participated.

**8. Eye Operation Camp:**



A Special Eye operation programme was organized for a blind child of Mahammadpur village Hirakud with our support. During Cataract checkup camp it was found that the child needs urgent operation to save his eyesight. In association with VIMSAR Burla the operation was conducted by Special team of surgeons and now he has fully recovered.

**9. Family Planning Camp:**



Under our family planning support programme we extend our logistic supports to Govt. Hospital Hirakud for organising sterilization camps from time to time. This qtr a camp was organised at Govt. Hospital, Hirakud in which all necessary supports including nutritional food kit were provided to patients who have undergone operation. A total of 30 cases were operated during this camp.

**10. Awareness on COVID-19:**



To create awareness among community people about the Covid-19 (Corona Virus) we have undertaken various community initiatives during March 2020. From the beginning we have started public announcement in the nearby villages and Hirakud town about the precautionary steps to be taken during this time. Banners were displayed at various public places with precautionary message of what to do and what not to do during the spread of Corona. Distance Circles were made in front of various shops, ATMs to ensure Social Distancing among the customers. Bleaching powders sprayed at market and community places & masks and sanitizers were provided to necessary people.

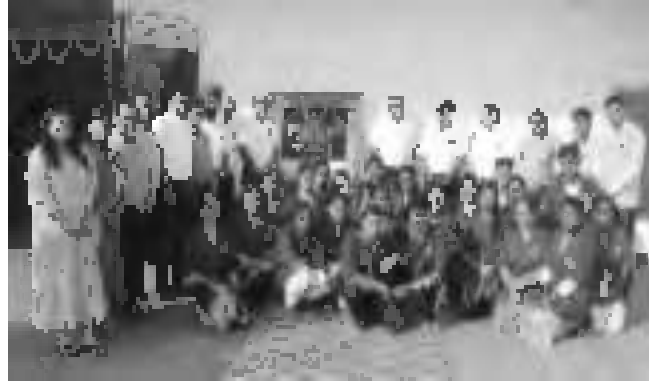
**Sustainable Livelihood**

**11. Tailoring Training centers:**

During this qtr tailoring training course have been completed at 3 centers of Gadmunda, Larpanka, and Hirakud. The final certificates will be awarded to them after evaluation of their examination papers.



## 12. Inauguration of Aditya Birla Skill Center by our MD:



Our MD Mr. Satish Pai inaugurated the Aditya Birla Skill Center on 20<sup>th</sup> Feb 2020 at Sambalpur along with other senior officials present during the function. The Aditya Birla Skill center will provide vocational training and scope of employment to young mass belonging to the weaker section of the community. Various courses like Office Assistance, Food & Beverage management, Accounts Assistance, Plumbing, House hold electrician, will be imparted to the participants and after successful completion of training employment facilities will be extended to them in association with various employer. This qtr training for a batch of 25 students on Office Assistance course has been started. Depending upon the demand in the market new courses will also be launched in the future.

## 13. GROW CARE CSR Gold Award:



Hindalco Hirakud Complex has been awarded with the “Grow Care CSR Award” in Gold Category from Grow Care India Foundation for the year 2018-19 in the field of “Best Innovative CSR Project”. The award was decided by a group of jury members on the basis of presentation & the supporting documents submitted by us. The award was presented by our Cluster Head to the CSR Team during the Communication Meeting on 27<sup>th</sup> Feb 2020.

### **Infrastructure Development**

- Senior citizens community Hall renovation at Hirakud
- Haat repairing at Bhubaneswar damaged in last Cyclone.
- Developmental job at Hirakud Hospital.
- Construction of Individual Toilet.

### **Social Causes**

14. Support to Sir Isac Santra Bal Niketan at Sambalpur.

### **15. Women Sports Programme:**



To recognize the women folks every year we are celebrating International women's day on 8<sup>th</sup> March. This year we have organised different sports among women at different villages before the International Women's Day. During this qtr we have organized such sports in three different places namely Nuajamada, First Gap and Subash Maidan where more than 600 women participated. The winners were awarded during the celebration of International women's Day on 8<sup>th</sup> March 2020.



**16. Support For Volley Ball Tournament:**



We have jointly organized the 39<sup>th</sup> Profulla Routray Memorial National Level Volley Ball Tournament at Subash Maidan from 29<sup>th</sup> to 31<sup>st</sup> January 2020 with Shakti Club Hirkud. Teams from Bhubaneswar, Ranchi, Karnataka, UP, Chennai & Mumbai with national level players have participated in the event. All the matches were conducted by judges of national repute from Indian Volley Ball Federation. The tournament was inaugurated by our HR Head. Among the other distinguished guests were Cluster Head –CSR, Ex-Chairman, Hirkud N.A.C, IIC of Hirkud Police Station and officers from Hindalco Industries. A large audience along with many of our senior officers, officials of Hirkud Athletic Association and Shakti Club were also present. All the matches were of high voltage with jam packed audiences. In the closing ceremony Prizes were given away to the Winners, Runners Ups and best individual performers in different field. CISF Ranchi team defeated the rising star Team Mumbai in 3-1 set and emerged as the new Champion. In the Closing ceremony the Joint Labour Commissioner was the Chief Guest and awarded with prizes to the winning team. Our Complex HR Head Mr. Krishna Padhi and other officials were also present during the closing ceremony to encourage the participants.

**17. Support For Hirakud Mahotsav:**



6<sup>th</sup> HiraKud Mahotsav was organised in HiraKud where cultural programmes were organised to represent the art & culture of different part of Odisha. In the venue of the Mahotsav stalls were opened for display/ sale of products by different agencies, where SHGs promoted by us also participated. Hindalco have extended, both financial as well as other logistic support for the success of the Mahotsav.

**18. Logistic Supports to Utkal Samilani:**



We have provided chairs to the Utkal Samilani Branch of HiraKud for sitting arrangements of the members of the organisation. The members of Utkal samilani have requested us to arrange some chair for them for their day to day activities.

**19. GET Visit to CSR Sites:**



A Team of Newly joined GET (Graduate Engineer Trainees) have visited various CSR sites and interacted with the community people about the role of Company on implementing various CSR Programmes and its impact to society. During their visit they have visited to Mahammdpur and Gadmunda village and interacted with the beneficiaries like SHG members, School teachers, villagers, students and other community representatives.

**20. International Women's day Celebration:**



We are working on women empowerment for helping the women folk for their social & economical uplift. On the occasion of the International Women's Day on 8<sup>th</sup> March, a rally was organised among the SHG members of Hirakud. More than 300 women SHG members joined the rally and subsequently a meeting was organised at Hindalco Community Center in which the importance of women's day celebration in which the importance of their role in building the Nation was narrated by Guests. The winners of various month long sports event organized earlier at different villages on the occasion of the Women's Day were awarded in the function by the Guests. Dr. Mirashree Pati, Asst. Surgeon Veterinary Hospital Hirakud and Mrs. Debjani Panda (Sr. Teacher DAV Public School Burla) were present as guest and encouraged the participants.

<b>Hindalco Hirakud Complex CSR EXPENSES 2019-20</b>	
<b>Area</b>	<b>Expenses Amount (in Lakh)</b>
<b>Education</b>	<b>31.15</b>
<b>Health Care</b>	<b>20.61</b>
<b>Sustainable Livelihood</b>	<b>13.16</b>
<b>Infrastructure Development</b>	<b>69.61</b>
<b>Social Causes</b>	<b>24.58</b>
<b>TOTAL</b>	<b>159.11</b>