



Government of India
Ministry of Environment, Forest and Climate Change
(Impact Assessment Division)

To,

The Associate Vice President
BALCO
Cosmos Building first floor, Balco Nagar, Korba, Haryana-495684

Subject: Grant of Environmental Clearance (EC) to the proposed Project Activity under the provision of EIA Notification 2006-regarding

Sir/Madam,

This is in reference to your application for Environmental Clearance (EC) in respect of project submitted to the Ministry vide proposal number IA/CG/IND/2536/2007 dated 20 Sep 2021. The particulars of the environmental clearance granted to the project are as below.

- | | |
|--|--|
| 1. EC Identification No. | EC22A008CG177331 |
| 2. File No. | J-11011/123/2007-IA.II(I) |
| 3. Project Type | Expansion |
| 4. Category | A |
| 5. Project/Activity including Schedule No. | 3(a) Metallurgical industries (ferrous & non ferrous) |
| 6. Name of Project | Aluminium Smelter Plant and 300 MW Captive Power Plant |
| 7. Name of Company/Organization | BALCO |
| 8. Location of Project | Chhattisgarh |
| 9. TOR Date | N/A |

The project details along with terms and conditions are appended herewith from page no 2 onwards.

Date: 22/04/2022

(e-signed)
Sundar Ramanathan
Scientist E
IA - (Industrial Projects - 1 sector)

Note: A valid environmental clearance shall be one that has EC identification number & E-Sign generated from PARIVESH. Please quote identification number in all future correspondence.

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This refers to your proposal no. IA/CG/IND/2536/2007 dated 20/09/2021 submitted through Parivesh Portal and subsequent ADS replies dated 10/10/2021, 08/12/2021, 06/03/2022 & 11/03/2022 seeking for grant of **Environment Clearance (EC)** for the project mentioned above.

2. As per the provisions of the Environment Impact Assessment (EIA) Notification, 2006, the above-mentioned project/activity is listed at schedule no. 3 (a) Metallurgical industries (Ferrous & non-ferrous) under Category "A" of the schedule of the EIA notification, 2006 and appraised at Central level.
3. Accordingly, the above-mentioned proposal has been considered by the **Reconstituted EAC (Industry-I)** in its **45th meeting held on 28th - 29th September, 2021, reconsidered in 47th meeting held on 28th - 29th October, 2021; 49th meeting held on 16th - 17th December, 2021 and 2nd meeting of new committee held on 22nd - 23rd March, 2022.** The minutes of the meeting and all the project documents are available on PARIVESH portal which can be accessed at <https://parivesh.nic.in/>.
4. The details of the proposal are as per the EIA report submitted by the proponent. The salient features of the expansion proposal as presented during the above-mentioned meeting of EAC (Industry 1) are as under: -

S.No.	Particulars	Details
a.	Terms of Reference for undertaking EIA study	19/09/2017
b.	Period of baseline data collection	1 st December 2019 to 29 th February 2020
c.	Date of Public Consultation	17/02/2021
d.	Action plan to address the PH issues	In addition to EMP budget of Rs. 712.78 crores, an amount of Rs. 70.24 Crores have been earmarked to address the issues raised during public consultation. Detail of activities proposed attached as Annexure 1 .
e.	Location of the project	Risda Village, Korba Tehsil, Korba District, Chhattisgarh.
f.	Latitude and Longitude of the project site.	BALCO Complex a) Latitude: 22°23'25.49"N to 22°24'11.57"N b) Longitude: 82°43'33.55"E to 82°44'58.01"E Township a) Latitude: 22°24'11.29"N to 22°24'47.39"N b) Longitude: 82°44'47.70"E to 82°46'22.52"E Ash Pond a) Latitude: 22°24'22.79"N to 22°24'50.21"N b) Longitude: 82°43'43.18"E to 82°44'54.78"E Proposed Aluminium Smelter Plant: a) Latitude: 22°23'24.5"N to 22°23'49.4"N b) Longitude: 82°43'32.9"E to 82°44'09.5"E
g.	Total land	Total land: 1099.91 ha (or) 2718 acres including Township, Ash Pond & other land outside.
h.	Land acquisition details as per MoEF&CC O.M. dated 7/10/2014	The proposed expansion will be carried out in an area of 39.67 ha available within the existing plant area of 383.63 ha. No additional land is required for proposed expansion. Total land of 1099.91 ha is already under the possession of BALCO.

S.No.	Particulars	Details
i.	Existence of habitation & involvement of R&R, if any	No R&R involved.
j.	Elevation of the project site	295 m - 300 m above MSL
k.	Involvement of Forest land if any.	No Forest Land is involved
l.	Water body exists within the project site as well as study area	Project Site: Nil Study Area: <ul style="list-style-type: none"> • Belgari nala (0.1 km, NW) • Dhengu nala (0.1 km, S) • Hasdeo river (1.5 km, NW)
m.	Existence of ESZ / ESA / national park / wildlife Sanctuary / biosphere Reserve / tiger reserve / elephant reserve etc. if any within the study area	Nil.
n.	Project cost	INR 6387 Crores
o.	EMP cost	INR 712.78 Crores (Capital Cost) INR 47.28 Crores (Recurring Cost)
p.	Employment opportunity	1050 nos. (Direct) and 4000 nos. (Indirect-contractual)
q.	Water and Power requirement	Water – 4900 m ³ /day [Existing: 2500 m ³ /day and Expansion: 2400 m ³ /day] Power – 1750 MW [Existing: 950 MW and Expansion: 800 MW]

Unit configuration and capacity:

S No	Name	Existing Units		Proposed Units		Total (Existing +Proposed)	
		Configuration	Production	Configuration	Production	Configuration	Production
1	Aluminium Smelter	2.5 LTPA 3.25 LTPA	5.75 LTPA	5.1 LTPA	5.1 LTPA	10.85 LTPA	10.85 LTPA

5. The EAC (Industry-I) in its 2nd meeting held on 22-23rd March, 2022, based on information & clarifications provided by the project proponent and after detailed deliberations recommended the proposal for grant of Environment Clearance subject to stipulation of specific and general conditions as detailed in the paragraph given below.
6. The MoEF&CC has examined the proposal in accordance with the Environment Impact Assessment (EIA) Notification, 2006 & further amendments thereto and after accepting the recommendations of the Expert Appraisal Committee (Industry-1) hereby decided to grant Environment Clearance for instant proposal of **M/s. Bharat Aluminium Company Limited (BALCO)** under the provisions of EIA Notification, 2006 subject to the following specific conditions and general conditions:

A. Specific Conditions

- i. The project proponent shall abide by all orders and judicial pronouncements, made from time to time in case no. IA No.1424-1425 of 2005 filed in W.P. (C) No.202/1995 (T N Godavarman matter) in Hon'ble High Court of Chhattisgarh; Civil Appeal No. 3236/2020 (BALCO vs MoEF&CC& Others) in Hon'ble Supreme Court and Writ Petition (PIL) 58/2020 (Dilendra Yadav vs CECB &Ors) in Hon'ble High Court of Chhattisgarh.
- ii. The poly-aromatic hydrocarbons (PAH) from the carbon plant (anode bake oven) shall

- not exceed 2 mg/Nm³. The data on PAH shall be monitored quarterly and report shall be submitted regularly to the Ministry/Regional Office at Raipur and CECB.
- iii. Particulate fluoride emissions shall not be more than 0.65 mg/Nm³ and fugitive particulate fluoride emissions from pot room shall not be more than 1.85 mg/Nm³.
- iv. SO₂ and NO_x emissions shall be controlled by replacing Furnace Oil with Low Sulphur Heavy Stock (LSHS) within 6 months. Compliance status in this regard shall be submitted to the Regional Office of the MoEF&CC latest by 30/06/2022.
- v. Project proponent shall achieve the Fluoride consumption less than 10 kg/tonne of Aluminium production for the existing 5.75 LTPA Aluminium smelter by 30/04/2022 and for the proposed 5.1 LTPA expansion project right from the day of commissioning of the unit.
- vi. Total water requirement for the existing and expansion project shall not exceed 4900 KLD.
- vii. Present stock of SPL (48000 T) and legacy SPL stock shall be liquidated by December 2022 as committed.
- viii. Refractory SPL stock of 30,000 T stored in covered shed on concrete floors shall be disposed off within 18 months from the date of approved Standard Operating Procedure (SOPs) by CPCB.
- ix. Present stock of Shot Blasting Dust stored in covered shed in plant premises is 10,000 T which shall be disposed off within 18 months from the date of approved Standard Operating Procedure (SOPs) by CPCB.
- x. PM levels shall be less than 30 mg/Nm³ for all units under expansion. In case of older units, PP shall initiate retrofitting/modification action to achieve the PM emission level of 30 mg/Nm³ by October, 2024.
- xi. Leachate from Secured Land Fill (SLF) shall be collected and transferred to the solar drying ponds. During rainy season, SLF shall be covered with tarpaulin to minimize leachate generation. Regular monitoring of cyanide and fluoride in waste water shall be monitored.
- xii. The company shall develop rainwater structures to harvest the run-off water for recharge of ground water as per the action plan submitted in the EIA report.
- xiii. All the recommendations made in the Charter on Corporate Responsibility for Environment Protection (CREP) for the Aluminium sector shall be strictly implemented.
- xiv. Legacy ash stocks of 18.2 Million tons shall be liquidated by December 2024. The vehicles carrying ash from dyke shall use tarpaulin covers. No additional ash pond shall be developed for ash disposal.
- xv. Performance monitoring of pollution control equipment shall be taken up yearly and compliance status in this regard shall be reported to RO.
- xvi. BALCO shall develop captive refractory detoxifying facility at project site by 31st March, 2024 as committed after obtaining requisite statutory approvals from the concerned Competent Authority.
- xvii. The recommendations of the approved Site-Specific Conservation Plan / Wildlife Management Plan shall be implemented in consultation with the State Forest Department. The implementation report shall be furnished along with the six-monthly compliance report to the concerned Regional Office of the MoEF&CC.
- xviii. The area of sampling and analysis of fluoride in soil and forage should extend up to 10 kilometers radius of plant premises covering upwind and downwind directions. Further, fluoride sampling and analysis should be taken quarterly at the nearest irrigated lands growing crops, vegetables, and other products of human consumption.

- xix. The major emissions are from the pot room roof. The sampling frequency should be increased, and sampling is done at multiple locations. The laser-based advance technology shall be in place by March, 2023 for continuously monitor gaseous fluoride emissions from pot rooms on real time basis.
- xx. Wheel Washing mechanism shall be provided in entry and exit gates with complete water recirculation system
- xxi. Three tier Green Belt shall be developed in a time frame of one year covering 33% of total area with native species all along the periphery of the project site of adequate width and tree density shall not be less than 2500 per ha. Survival rate of green belt developed shall be monitored on periodic basis to ensure that damaged plants are replaced with new plants in the subsequent years. GB action plan is given as below.

S. No.	Details	Total Area (in ha)	Existing Plantation Area (in ha)	On-Going Plantation Area (in ha)	*Action Plan: Green Cover Proposed up to FY 24 (in Ha)			Total Green Cover (in Ha)	Total Green Cover- (%)	Species Proposed
					FY 22	FY 23	FY 24			
1	Integrated Aluminium Smelter Complex	383.63	97.72	0.81	5.0	5.85	17.40	126.78	33%	Karanj, Neem, Peepal, Sal, Sarai, Arjun, Sagon, Banyan, Sisoo, Rain Tree, Gulmohar, Mahua, Kadam, etc
2	Ash Dyke	151.75	8.87	-	6	10	9.24	34.11		
3	Township Land	263.04	126.49	6.84	2	2	2	139.33		
4	Balance Other Land	301.49	20.94	7.12	10	10	15	63.06		
	Total Area	1099.91	254.02	14.77	23	27.85	43.64	363.28		

- xxii. Greening and Paving shall be implemented in the plant area to arrest soil erosion and dust pollution from exposed soil surface.

B. General Conditions

I. Statutory compliance:

- i. The Environment Clearance (EC) granted to the project/ activity is strictly under the provisions of the EIA Notification, 2006 and its amendments issued from time to time. It does not tantamount/ construe to approvals/ consent/ permissions etc., required to be obtained or standards/conditions to be followed under any other Acts/Rules/Subordinate legislations, etc., as may be applicable to the project.

II. Air quality monitoring and preservation

- i. The project proponent shall install 24x7 Continuous Emission Monitoring System (CEMS) at process stacks to monitor stack emission as well as 4 Nos. Continuous Ambient Air Quality Station (CAAQS) for monitoring AAQ parameters with respect to standards prescribed in Environment (Protection) Rules 1986 as amended from time to time. The CEMS and CAAQMS shall be connected to SPCB and CPCB online servers and calibrate these systems from time to time according to equipment supplier specification through labs recognized under Environment (Protection) Act, 1986 or NABL accredited laboratories.
- ii. The project proponent shall monitor fugitive emissions in the plant premises at least once in every quarter through labs recognized under Environment (Protection) Act, 1986.
- iii. The project proponent shall provide leakage detection and mechanized bag cleaning facilities for better maintenance of bags.
- iv. The project proponent shall ensure covered transportation and conveying of ore, coal and other raw material to prevent spillage and dust generation; Use closed bulkers for carrying fly ash;
- v. The project proponent shall provide wind shelter fence and chemical spraying on the

- raw material stock piles;
- vi. Ventilation system shall be designed for adequate air changes as per the prevailing norms for all tunnels, motor houses, and cement bagging plants.
 - vii. Sufficient number of mobile or stationery vacuum cleaners shall be provided to clean plant roads, shop floors, roofs, regularly.
 - viii. Adopt measures to recover fluoride gas from electrolytic cells and recycle the same in the process.
 - ix. Practice use of low-Sulphur tars for baking anodes.
 - x. Make efforts to increase the life of pot lining through better construction and operating techniques.
 - xi. Design the pot roofs with louvers and roof ventilators

III. Water quality monitoring and preservation

- i. The project proponent shall install 24x7 continuous effluent monitoring system with respect to standards prescribed in Environment (Protection) Rules 1986 (G.S.R 742 (E) dated 30th August 1990 and further amended vide G.S.R 46 (E) dated 3rd February 2006 (Aluminium); S.O. 3305 (E) dated 7th December 2015 (Thermal Power Plants) as amended from time to time and connected to SPCB and CPCB online servers and calibrate these system from time to time according to equipment supplier specification through labs recognised under Environment (Protection) Act, 1986 or NABL accredited laboratories.
- ii. The project proponent shall monitor regularly ground water quality at least twice a year (pre and post monsoon) at sufficient numbers of piezometers/sampling wells in the plant and adjacent areas through labs recognised under Environment (Protection) Act, 1986 and NABL accredited laboratories.
- iii. Sewage Treatment Plant shall be provided for treatment of domestic wastewater to meet the prescribed standards.
- iv. Garland drains and collection pits shall be provided for each stock pile to arrest the run-off in the event of heavy rains and to check the water pollution due to surface run off
- v. Water meters shall be provided at the inlet to all unit processes in the cement plant.
- vi. The project proponent shall make efforts to minimize water consumption in the cement plant complex by segregation of used water, practicing cascade use and by recycling treated water.

IV. Noise monitoring and prevention

- i. Noise quality shall be monitored as per the prescribed Noise Pollution (Regulation and Control) Rules, 2000 and report in this regard shall be submitted to Regional Officer of the Ministry as a part of six-monthly compliance report.

V. Energy Conservation measures

- i. The project proponent shall provide waste heat recovery system (pre-heating of combustion air) at the flue gases.
- ii. Provide solar power generation on roof tops of buildings, for solar light system for all common areas, street lights, parking around project area and maintain the same regularly;
- iii. Provide LED lights in their offices and residential areas.

VI. Waste management

- i. Used refractories shall be recycled.
- ii. Oily scum and metallic sludge recovered from ETP shall be mixed, dried, and briquetted and reused.

VII. Green Belt

- i. The project proponent shall prepare GHG emissions inventory for the plant and shall submit the Programme for reduction of the same including carbon sequestration including plantation.
- ii. Project proponent shall submit a study report on De-carbonization program, which would essentially consist of company's carbon emissions, carbon budgeting/ balancing, carbon sequestration activities and carbon capture, use and storage and offsetting strategies. Further, the report shall also contain time bound action plan to reduce its carbon intensity of its operations and supply chains, energy transition pathway from fossil fuels to Renewable energy etc. All these activities/ assessments should be measurable and monitor able with defined time frames.

VIII. Public hearing and Human health issues

- i. Emergency preparedness plan based on the Hazard identification and Risk Assessment (HIRA) and Disaster Management Plan shall be implemented.
- ii. The project proponent shall carry out heat stress analysis for the workmen who work in high temperature work zone and provide Personal Protection Equipment (PPE) as per the norms.
- iii. Occupational health surveillance of the workers shall be done on a regular basis and records maintained.

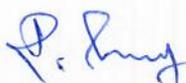
IX. Environment Management

- i. The project proponent shall comply with the provisions contained in this Ministry's OM vide F.No. 22-65/2017-IA.III dated 30/09/2020. As part of Corporate Environment Responsibility (CER) activity, company shall adopt nearby villages based on the socio-economic survey and undertake community developmental activities in consultation with the village Panchayat and the District Administration as committed.
- ii. The company shall have a well laid down environmental policy duly approve by the Board of Directors. The environmental policy should prescribe for standard operating procedures to have proper checks and balances and to bring into focus any infringements/deviation/violation of the environmental / forest / wildlife norms / conditions. The company shall have defined system of reporting infringements / deviation / violation of the environmental / forest / wildlife norms / conditions and / or shareholders / stake holders. The copy of the board resolution in this regard shall be submitted to the MoEF&CC as a part of six-monthly report.
- iii. A separate Environmental Cell both at the project and company head quarter level, with qualified personnel shall be set up under the control of senior Executive, who will directly to the head of the organization.

X. Miscellaneous

- i. The project proponent shall make public the environmental clearance granted for their project along with the environmental conditions and safeguards at their cost by prominently advertising it at least in two local newspapers of the District or State, of which one shall be in the vernacular language within seven days and in addition this shall also be displayed in the project proponent's website permanently.
- ii. The copies of the environmental clearance shall be submitted by the project proponents to the Heads of local bodies, Panchayats and Municipal Bodies in addition to the relevant offices of the Government who in turn has to display the same for 30 days from the date of receipt.
- iii. The project proponent shall upload the status of compliance of the stipulated environment clearance conditions, including results of monitored data on their website and update the same on half-yearly basis.

- iv. The project proponent shall monitor the criteria pollutants level namely; PM10, SO2, NOx (ambient levels as well as stack emissions) or critical sectoral parameters, indicated for the projects and display the same at a convenient location for disclosure to the public and put on the website of the company.
 - v. The project proponent shall submit six-monthly reports on the status of the compliance of the stipulated environmental conditions on the website of the ministry of Environment, Forest and Climate Change at environment clearance portal.
 - vi. The project proponent shall submit the environmental statement for each financial year in Form-V to the concerned State Pollution Control Board as prescribed under the Environment (Protection) Rules, 1986, as amended subsequently and put on the website of the company.
 - vii. The project proponent 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, commencing the land development work and start of production operation by the project.
 - viii. The project proponent shall abide by all the commitments and recommendations made in the EIA/EMP report, commitment made during Public Hearing and also that during their presentation to the Expert Appraisal Committee.
 - ix. No further expansion or modifications in the plant shall be carried out without prior approval of the Ministry of Environment, Forests and Climate Change (MoEF&CC).
 - x. Concealing factual data or submission of false/fabricated data may result in revocation of this environmental clearance and attract action under the provisions of Environment (Protection) Act, 1986.
 - xi. The Ministry may revoke or suspend the clearance, if implementation of any of the above conditions is not satisfactory.
 - xii. The Ministry reserves the right to stipulate additional conditions if found necessary. The Company in a time bound manner shall implement these conditions.
 - xiii. The Regional Office of this Ministry shall monitor compliance of the stipulated conditions. The project authorities should extend full cooperation to the officer (s) of the Regional Office by furnishing the requisite data / information/monitoring reports.
 - xiv. Any appeal against this EC shall lie with the National Green Tribunal, if preferred, within a period of 30 days as prescribed under Section 16 of the National Green Tribunal Act, 2010.
7. This issues with the approval of the Competent Authority.


(Sundar Ramanathan)
Scientist 'E'

Copy to:-

1. Secretary, Department of Environment, Government of Chhattisgarh Secretariat Raipur.
2. Regional Officer, Ministry of Environment, Forest and Climate Change, Regional Office (WCZ), Ground Floor, East Wing, New Secretariat Building, Civil Lines, Nagpur – 44000.
3. Chairman, Central Pollution Control Board, CBD-Cum-Office Complex, East Arjun Nagar, New Delhi-110 032.
4. Chairman, Chhattisgarh Environment Conservation Board, Nanak Niwas, Civil Lines, Raipur, Chhattisgarh.
5. Member Secretary, Central Ground Water Authority, A2, W3 Curzon Road Barracks, K.G. Marg, New Delhi-110001.
6. District Collector, Korba District, Chhattisgarh.
7. Guard File/Record File/Monitoring File.
8. MoEF&CC website


(Sundar Ramanathan)
Scientist 'E'

Annexure-1

Action plan as per MoEF&CC O.M. dated 30/09/2020:

Point	Topic	Work to be done	Units	Total tentative cost (in crore)	F Y'22	F Y 23	Completion date
1	Infrastructure for Road Safety	Road & peripheral development to facilitate safe communication for public	2 number	9.7	1 units	1 unit	--
					4.7 Cr	5.0 Cr	
2	Training & Skill Development Program for Local Youth	Skill Development Trainings to youths - 2500	2500 number	6.2	790 units	1710 unit	March'23
		Sustainable livelihood through Farm based intervention - 3000 farmers & 24 villages	3000 number	5.88	1000 units	2000 units	
3	Community health and community rural infrastructure	Various health initiatives in 45 communities, benefitting 80K people, through Mobile Health Vans, Menstrual Health Management, TB, HIV, Maternal and child health and COVID relief activities)	8000 number	7.0	67000 units	80000 units	March'23
					3.55Cr	3.45 Cr	
		Community toilets - 25	25 number	2.0	--	25 units	March'23
					--	2 Cr	
		Water Supply through Pipeline - 5 villages (Belgiri Basti, Rogbehri, Dondro, Jambahar&Parsabhata)	20 km	2.5	5 units	15 units	March'23
					0.5 Cr	2.0 Cr	
		Street Lights - 150	150 numbers	8.0	50 units	100 unit	March'23
					2.75 Cr	5.25 Cr	
		Community halls & Repairs of community stages - 5 & 10	5 & 10 numbers	3.0	--	5 & 10 units	March'23
					--	3.0 Cr	
		Children Park & Open Gyms - 5	5 numbers	1.0	--	5 units	March'23
					--	1.0 Cr	
		Bridge - 1	1	0.4	1 unit	--	March'22
					0.4 Cr	--	
		Storage shed - 1	1	0.15	1 unit	--	March'22
			0.15 Cr	--			
Road construction - 5000 M (1000 M RCC & 4000 M Tar)	5000 m	3.0	--	5000 m	March'23		
			--	3.0 Cr			
Safety signages in 20 communities	20 number	0.5	10 units	10 units	March'23		
			0.25 Cr	0.25 Cr.			
100 bedded Covid hospital for Public	1 number	6.0	1 unit	--	March'2022		
			6.0 Cr	--			
Support to sports and cultural activities of the area - 40	40 number	0.92	40 units	40	March'23		
				0.42 Cr	0.50 Cr		
4	Education	Project Connect (Covering 8 Schools & 1800 Students)	1800 number	1.02	1400 units	1800 units	March'23
					0.42 Cr	0.60	
		Renovation of 20 Schools covering 40 communities including furniture for 10 schools	20 number	2.4	--	20 units	March'23
					--	2.4 Cr	
Renovation of 55 Aganwadis for Nand Ghars covering 40 communities	55 numbers	4.0	16 units	39 units	March'23		
			0.4 Cr	3.6 Cr			
				1.0	--	1 unit	March'23

Point	Topic	Work to be done	Units	Total tentative cost (in crore)	F Y'22	F Y 23	Completion date
		Coaching Facilities for engineering and CA field (60 Students)	1 number		--	1.0 Cr	
5	Women Empowerment	Project Unnati - Strengthening of SHGs and income generation activities - 5000 Women in 45 communities	5000 Women	5.57	4000 no 1.07 Cr	5000 no 4.5 Cr	
Total in Crore				70.24	22.19	48.05	

