

**APPENDIX-I / FORM -1**  
**APPLICATION FOR PRIOR ENVIRONMENTAL  
CLEARANCE**

**FOR**  
**INCREASING THE PRODUCTION CAPACITY**  
**OF**  
**EXISTING BLAS FURNACES FROM 2,92,000 TPA**  
**TO 3,50,000 TPA (INCREASE BY 58000 TPA) BY**  
**PROCESS OPTIMIZATION & EFFICIENCY**  
**IMPROVEMENT**

*Submitted to*  
**Ministry of Environment and Forests**  
New Delhi

*Project Proponent:*  
**M/s. Vedanta Limited**  
**(Formerly Sesa goa Limited)**  
Goa

*Environment Consultant:*

**Vimta**  
Driven by Quality. Inspired by Science

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*Recognized by MoEF, New Delhi)*

April, 2016

## FORM – 1

## (I) BASIC INFORMATION

S. No.	Item	Detail
1	Name of the Project	: Enhancement in production capacity (expansion) for existing Blast Furnaces from 292000 TPA to 350000 TPA by Process Optimization and Efficiency Improvement
2	S. No. in the Schedule	: 3 (a) Primary Metallurgical Industry
3	Proposed capacity/ areal length/ tonnage to be handled/ command are/ lease areal number of wells to be drilled	: Additional 58000 tons per annum hot metal production from existing blast furnaces without physical expansion. No additional land area required
4	New/ Expansion/ Modernization	: Expansion (Increase of production through capacity enhancement by Process Optimization and Efficiency Improvement). Oxygen enrichment of blast will be done by setting up Oxygen Plant No increase in land area. Blast Furnaces 1 & 2 were installed and commissioned prior to 1994 and hence there is no EC. However Consent to Operate from GSPCB exists. Hence application is like virtually applying under Clause 7 (ii) Expansion of EIA Notification 2006.
5	Existing capacity / area etc	: 292000 Tonnes/Annum Pig Iron is produced from 2 Mini Blast Furnaces (MBFs) of 173m <sup>3</sup> Working Volume. These MBFs were installed and commissioned prior to 1994.
6	Category of Project i.e. 'A' or 'B'	: A
7	Does it attract general condition? If yes, please specify	: No
8	Does it attract specific condition? If yes, please specify	: No
9	Location	: Amona Village Panchayat Area
	Plot/ Survey/ Khasra no.	: S. No 27, S No 39, S No. 41, S No 37, S No 42/1

**Appendix 1 (See paragraph-6)**

	Village	:	Amona Village
	Tehsil	:	Bicholim Taluka
	District	:	North Goa
	State	:	GOA
10	Nearest railway station/ airport along with distance in kms	:	Karmali Railway Station – 8 km Dabolim Airport – 35 Km
11	Nearest town, city, district headquarters along with distance in kms	:	Sankhali Town – 8 km Mapusa – 30 Km
12	Village Panchayats, Zilla Parishad, Municipal Corporation, Local Body (complete postal addresses with telephone nos. to be given)	:	Amona Village Panchayat
13	Name of the applicant	:	Vedanta Ltd. – Pig Iron Plant
14	Registered Address	:	Sesa Ghor, 20 EDC Complex, Patto, Panaji, Goa
15	Address for correspondence:	:	Same as above
	Name	:	N L Vhatte
	Designation (Owner/ Partner/ CEO)	:	Head – VAB
	Address	:	Navelim, Sankhali, Goa
	Pin Code	:	403505
	Email	:	navanath.vhatte@vedanta.co.in
	Telephone no.	:	Mobile No. 9765565531
	Fax	:	0832 2386090
16	Details of Alternative sites examined, if any. Location of these sites should be shown in toposheet	:	Not Applicable as proposed enhancement in production capacity will be carried out at existing blast furnaces by process Optimization and Efficiency Improvement
17	Interlinked Projects	:	No
18	Whether separate application of interlinked project has been submitted?	:	Not Applicable
19	If yes, date of submission	:	NA
20	If no, reason	:	NA
21	Whether the proposal involves approval clearance under: if yes, details of the same and their status to be gives:	:	
	(a) The Forest (Conservation) Act, 1980?	:	No
	(b) The Wildlife (Protection) Act; 1972?	:	No

**Appendix 1 (See paragraph-6)**

	(c) The CRZ Notification, 1991?	:	No
22	Whether there is any Government Order/ Policy relevant/ relating to the site?	:	No
23	Forest land involved (hectares)	:	Nil
24	Whether there is any litigation pending against the project and / or land in which the project is proposed to be set up?	:	No Environmental related litigation is pending. Also Pig Iron Plant is already operational. Production increase by 58000 T/year will be achieved by process optimization and efficiency improvement. However, the Amona Comunidade has filed a suit for eviction of Company from the comunidade propoerty 42/1 &43/1 of Amona, which was granted to Company in 1996. the comunidade has claimed that the property was granted to company as lease and not perpetual grant and the same has expired in 2012 and the company is illegally continuing possession of the property and has prayed for eviction and perpetual injunction against Company.
	(a) Name of Court	:	District Court-1 Mapusa
	(b) Case No.	:	Comunidade of Amona v. State of Goa and ors civil suit no 24/2015
	(c) Orders/ directions of the Court, if any and its relevance with the proposed project	:	No orders/directions issued. Also BFs are located in S. No 41, for which no litigation is pending.

**(II) Activity**

- 1. Construction, operation or decommissioning of the Project involving actions, which will cause physical changes in the locality (topography, land use, changes in water bodies, etc.)**

S. No.	Information/Checklist confirmation	Yes / No	Details thereof (with approximate quantities / rates, wherever possible) with source of information data

**Appendix 1 (See paragraph-6)**

1.1	Permanent or temporary change in land use, land cover or topography including increase in intensity of land use (with respect to local land use plan)	No	There will be no increase in land area because the enhancement of production capacity of Mini Blast Furnace (MBFs) from 292000 TPA to 350000 TPA will be done inside the existing Pig Iron Plant. Only Oxygen Plant will be installed.
1.2	Clearance of existing land, vegetation and buildings?	No	Not required
1.3	Creation of new land uses?	No	In the existing land area, oxygen plant will be installed.
1.4	Pre-construction investigations e.g. bore houses, soil testing?	No	Not required
1.5	Construction works?	No	Only Oxygen Plant will be installed in the existing area.
1.6	Demolition works?	No	Not required
1.7	Temporary sites used for construction works or housing of construction workers?	No	Not required
1.8	Above ground buildings, structures or earthworks including linear structures, cut and fill or excavations	No	Not required
1.9	Underground works including mining or tunneling?	No	Not required
1.10	Reclamation works?	No	Not required
1.11	Dredging?	No	Not required
1.12	Offshore structures?	No	Not required
1.13	Production and manufacturing processes?	No	Existing process of hot metal production through Blast Furnaces will be followed. Only process optimization and efficiency improvement will lead to enhancement of hot metal production. Also installation of Oxygen Plant for Blast enrichment is proposed.

**Appendix 1 (See paragraph-6)**

1.14	Facilities for storage of goods or materials?	No	Existing facilities will be used.
1.15	Facilities for treatment or disposal of solid waste or liquid effluents?	No	Existing facilities will be used. Plant operates on Zero Liquid Discharge and all water is Recycled & Reused Dust collected from Bag Filters and GCP sludge is reused in Sinter Plant. Granulated slag is sold to cement plant Same practice will continue after production expansion.
1.16	Facilities for long term housing of operational workers?	No	Not required
1.17	New road, rail or sea traffic during construction or operation?	No	Not required
1.18	New road, rail, air waterborne or other transport infrastructure including new or altered routes and stations, ports, airports etc?	No	Not required
1.19	Closure or diversion of existing transport routes or infrastructure leading to changes in traffic movements?	No	Not required
1.20	New or diverted transmission lines or pipelines?	No	Not required
1.21	Impoundment, damming, culverting, realignment or other changes to the hydrology of watercourses or aquifers?	No	Not required
1.22	Stream crossings?	No	Not required
1.23	Abstraction or transfers of water from ground or surface waters?	No	Additional abstraction or transfer of water from ground or surface water not required. Water will be used from within existing permission granted by Water Resource Department.
1.24	Changes in water bodies or the land surface affecting drainage or run-off?	No	Not applicable
1.25	Transport of personnel or materials for construction, operation or decommissioning?	No	Not required

**Appendix 1 (See paragraph-6)**

1.26	Long-term dismantling or decommissioning or restoration works?	No	Not required
1.27	Ongoing activity during decommissioning which could have an impact on the environment?	No	Not required
1.28	Influx of people to an area in either temporarily or permanently?	No	There will be no influx of people
1.29	Introduction of alien species?	No	Not applicable
1.30	Loss of native species or genetic diversity?	No	Not applicable
1.31	Any other actions?	No	Not applicable

**2. Use of Natural resources for construction or operation of the Project (such as land, water, materials or energy, especially any resources which are non-renewable or in short supply):**

S.No.	Information/ checklist confirmation	Yes / No	Details thereof (with approximate quantities /rates, wherever possible) with source of information data
2.1	Land especially undeveloped or agricultural land (ha)	No	Additional land not required.
2.2	Water (expected source & competing users) unit: KLD	Yes	Additional water of 200 KL/day will be required which will be sourced from either rain water harvested in mine pits or post monsoon rain water harvested by installing barrage by WRD. Water quantity will not exceed the approved limits stated by Water Resource Department. No competing users.
2.3	Minerals (MT)	Yes	Sized iron ore, sinter, coal, coke, fluxes will be used
2.4	Construction material – stone, aggregates, and / soil (expected source – MT)	No	Not required. For oxygen plant very few construction material will be required.
2.5	Forests and timber (source – MT)	No	Not required
2.6	Energy including electricity and fuels (source, competing users) Unit: fuel (MT), energy (MW)	Yes	Source: Captive Power Plant (Waste Heat Recovery Boiler based) (2*30 MW) exists from which additional power of 1-

**Appendix 1 (See paragraph-6)**

2.7	Any other natural resources (use appropriate standard units)	No	2MW will be consumed. Not applicable
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**3. Use, storage, transport, handling or production of substances or materials, which could be harmful to human health or the environment or raise concerns about actual or perceived risks to human health.**

S. No.	Information /Checklist confirmation	Yes / No	Details thereof (with approximate quantities/ rates, wherever possible) with source of information data
3.1	Use of substances or materials, which are hazardous (as per MSIHC rules) to human health or the environment (flora, fauna, and water supplies)	No	No additional quantity of liquid fuel required
3.2	Changes in occurrence of disease or affect disease vectors (e.g. insect or water borne diseases)	No	Not applicable
3.3	Affect the welfare of people e.g. by changing living conditions?	No	Not applicable
3.4	Vulnerable groups of people who could be affected by the project e.g. hospital patients, children, the elderly etc.,	No	Not applicable
3.5	Any other causes	No	Not applicable

**4. Production of solid wastes during construction or operation or decommissioning (MT/month)**

S. No.	Information/Checklist confirmation	Yes / No	Details thereof (with approximate quantities / rates, wherever possible) with source of information data
4.1	Spoil, overburden or mine wastes	No	Not applicable
4.2	Municipal waste (domestic and or commercial wastes)	No	Not applicable



**Appendix 1 (See paragraph-6)**

4.3	Hazardous wastes (as per Hazardous Waste Management Rules)	No	Not applicable
4.4	Other industrial process wastes	Yes	Raw Material Fines, Process Dust, Sludge from mini blast furnaces will be used as a raw material in Sintering process. Additional Slag will be sold to cement industry as raw material for Cement manufacturing.
4.5	Surplus product	No	Not applicable
4.6	Sewage sludge or other sludge from effluent treatment	No	Not applicable
4.7	Construction or demolition wastes	No	Not applicable
4.8	Redundant machinery or equipment	No	Not applicable
4.9	Contaminated soils or other materials	No	Not applicable
4.10	Agricultural wastes	No	Not applicable
4.11	Other solid wastes	No	Not applicable

**5. Release of pollutants or any hazardous, toxic or noxious substances to air (Kg/hr)**

S. No.	Information / Checklist confirmation	Yes / No	Details thereof (with approximate quantities / rates, wherever possible) with source of information data
5.1	Emissions from combustion of fossil fuels from stationary or mobile sources	Yes	Existing pollution control equipment are adequate to handle additional quantities meeting the norms
5.2	Emissions from production processes	Yes	Existing pollution control equipment is adequate to handle additional quantities meeting the norms. The Flue gas generated from Blast Furnace is cleaned

**Appendix 1 (See paragraph-6)**

			and reused for power generation using WHRB & also for heating in hot blast stoves
5.3	Emissions from materials handling including storage or transport	Yes	Fugitive dust emission from material handling is controlled dust suppression system.
5.4	Emissions from construction activities including plant and equipment	No	Not applicable
5.5	Dust or odours from handling of materials including construction materials, sewage and waste	No	Not applicable
5.6	Emissions from incineration of waste	No	Not applicable
5.7	Emissions from burning of waste in open air (e.g. slash materials, construction debris)	No	Not applicable
5.8	Emissions from any other sources	No	There will be no additional sources of air emissions

**6. Generation of Noise and Vibration, and Emissions of Light and Heat:**

S. No.	Information / Checklist confirmation	Yes / No	Details thereof (with approximate quantities / rates, wherever possible) with source of information data with source of information data
6.1	From operation of equipment e.g. engines, ventilation plant, crushers	No	There will be no additional sources of noise.
6.2	From industrial or similar processes	No	Oxygen Plant will be provided with acoustic enclosures to adhere to workplace noise limits.
6.3	From construction or demolition	No	Not applicable
6.4	From blasting or piling	No	Not applicable
6.5	From construction or operational traffic	No	Not applicable

**Appendix 1 (See paragraph-6)**

6.6	From lighting or cooling system	No	Not applicable
6.7	From any other sources	No	Not applicable

**7. Risks of contamination of land or water from releases of pollutants into the ground or into sewers, surface waters, groundwater, coastal waters or the sea:**

S.No.	Information/Checklist confirmation	Yes / No	Details thereof (with approximate quantities /rates, wherever possible) with source of information data
7.1	From handling, storage, use or spillage of hazardous materials	No	Not applicable
7.2	From discharge of sewage or other effluents to water or the land (expected mode and place of discharge)	No	No sewage or other effluents will be disposed outside the plant boundary.
7.3	By deposition of pollutants emitted to air into the land or into water	No	There will be no additional pollutants emitted to air, land or water
7.4	From any other sources	No	Not applicable
7.5	Is there a risk of long term build up of pollutants in the environment from these sources?	No	Not applicable

**8. Risk of accidents during construction or operation of the Project, which could affect human health or the environment**

S. No.	Information / Checklist confirmation	Yes / No	Details thereof (with approximate quantities / rates, wherever possible) with source of information data
8.1	From explosions, spillages, fires etc from storage, handling, use or production of hazardous substances	No	No additional risk involved
8.2	From any other causes	No	-
8.3	Could the project be affected by natural disasters causing environmental damage (e.g. floods, earthquakes, landslides, cloudburst etc)?	No	-

**Appendix 1 (See paragraph-6)**

9. Factors which should be considered (such as consequential development) which could lead to environmental effects or the potential for cumulative impacts with other existing or planned activities in the locality

S. No.	Information / Checklist confirmation	Yes / No	Details thereof (with approximate quantities / rates, wherever possible) with source of information data
9.1	Lead to development of supporting facilities, ancillary development or development stimulated by the project which could have impact on the environment e.g.: <ul style="list-style-type: none"> <li>• Supporting infrastructure (roads, power supply, waste or waste water treatment, etc.)</li> <li>• housing development</li> <li>• extractive industries</li> <li>• supply industries</li> <li>• other</li> </ul>	No	-
9.2	Lead to after-use of the site, which could have an impact on the environment	No	-
9.3	Set a precedent for later developments	No	-
9.4	Have cumulative effects due to proximity to other existing or planned projects with similar effects	No	-

**III Environmental Sensitivity**

S. No.	Areas	Name / Identity	Aerial distance (within 15 km.) from proposed project location boundary
1	Areas protected under international conventions, national or local legislation for their ecological, landscape, cultural or other related value	Yes	Dr.Salim Ali Bird Sanctuary Approx. 10.1 km (for this sanctuary ESZ is 100 m)  Mhadei WLS: Approx 11km (ESZ is 1 km)  Bondla WLS : Approx 12 km (ESZ is 1 km)  Old Goa Church Approx 5.5 km
2	Areas which are important or sensitive for ecological reasons - Wetlands, watercourses or other water bodies, coastal zone, biospheres,	Yes	Arabian sea (about 12 km)  Mandovi River (300 m)  Karmali lake about 6 km

**Appendix 1 (See paragraph-6)**

	mountains, forests		
3	Areas used by protected, important or sensitive species of flora or fauna for breeding, nesting, foraging, resting, over wintering, migration	No	Dr. Salim Ali Bird Sanctuary: Approx 10.1 km (for this sanctuary ESZ is 100m)
4	Inland, coastal, marine or underground waters	Yes	Mandovi River (300 m) Arabian sea (12 km)
5	State, National boundaries	No	About 12km from Maharashtra border
6	Routes or facilities used by the public for access to recreation or other tourist, pilgrim areas	Yes	The state & national Highways are used by tourists to reach other tourists places in Goa
7	Defence installations	No	-
8	Densely populated or built-up area	No	-
9	Areas occupied by sensitive man-made land uses ( <i>hospitals, schools, places of worship, community facilities</i> )	Yes	Hospitals, schools, places of worship and community facilities of general nature exist in the 15 km area.
10	Areas containing important, high quality or scarce resources ( <i>ground water resources, surface resources, forestry, agriculture, fisheries, tourism, minerals</i> )	Yes	Goa is an important place of Tourist Interest and Mining
11	Areas already subjected to pollution or environmental damage. ( <i>those where existing legal environmental standards are exceeded</i> )	No	-
12	Areas susceptible to natural hazard which could cause the project to present environmental problems ( <i>earthquakes, subsidence, landslides, erosion, flooding or extreme or adverse climatic conditions</i> )	No	-

**(IV). Proposed Terms of Reference for EIA studies.**

Mini Blast Furnaces (MBFs), 2 nos. \* 173m<sup>3</sup> Working Volume were installed and commissioned prior to 1994. Hence Pig Iron Plant at Amona does not have Environmental Clearance, as set up was prior to EIA Notification 1994. Consent to Operate for 292000

## Appendix 1 (See paragraph-6)

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Tonnes/Annum from Goa State Pollution Control Board (GSPCB) exists.

The capacity enhancement through Process Optimization and Efficiency Improvement of the existing Mini Blast Furnaces is an expansion (increase of production only without any additional land requirements). Only Oxygen Plant will be installed for oxygen enrichment of the blast.

This production increase can be achieved through increased injection of wind volume by energy efficient blowing system, oxygen enriched blast, charging sinter feed upto 50%, better process control in operations, etc. Additional design capacity to suit incremental 58000 TPA production is available in all plant equipment. Only Oxygen Plant will be an additional installation.

There is no increase in the land area. Hence this application is to be considered under "Clause 7(ii) expansion", of EIA Notification 14/9/2006. As EC was not applicable prior to 1994 and now increase in production maximum to the tune of 58000 tonnes/annum will be through process optimization and efficiency improvement, without physical expansion.

TOR for EIA study and Public Consultation for this capacity enhancement is not proposed due to following reasons:

- i. The production enhancement of blast furnace will be done within the plant premises. No additional land will be acquired.
- ii. Maximum incremental production will be 58000 tonnes/annum due to process optimization and efficiency improvement.
- iii. The layout of blast furnace remains the same, except addition of oxygen plant.
- iv. No new emission outlet will be created. Wastewater will be recycled and reused. Slag will be sold to cement plants. Other solid wastes will be reused in the sinter plant. Hence no additional pollution load will be discharged to the environment.
- v. Ambient air quality data is generated on continuous basis. Two CAAQMS have been installed.
- vi. Therefore there will be insignificant impact on the air, water, land, soil, hydro-geology, and ecology due to this incremental production of 58000 TPA. There will be positive impact on the socio-economic environment. There will be no impact on the landuse. No forest issue or R&R issue will be there on account of this production enhancement.

All relevant technical details are provided in the Pre-Feasibility Report

## Appendix 1 (See paragraph-6)

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I hereby give an undertaking that the data and information given in the application and enclosures are true to the best of my knowledge and belief and I am aware that if any part of the data and information submitted is found to be false or misleading at any stage, the project will be rejected and clearance given, if any, to the project will be revoked at our risk and cost.



N L Vhate  
Head – Value Addition Business  
Sesa Ghor, 20 EDC Complex,  
Patto, Panaji, Goa

Date: 5<sup>th</sup> May 2016  
Place: Amona, Goa