

Application for Prior Environmental Clearance (EC)
 (Appendix-I, See Paragraph-6 Notification dated 14th September 2006 Amended to Data)

FORM 1

(I) BASIC INFORMATION

S. No.	Item	Details								
1.	Name of the Project/s	: Extension Project of 1X 20 MW Thermal Power Plant at Sarishatali - Asansol in West Bengal SH								
2.	S. No. of the schedule	: 1(d)								
3.	Proposed capacity / area / length / tonnage to be handled / command area / lease area / lease area / number of wells to be drilled	: CPL Sarishatali 20 MW Extension Project, Phase-II, West Bengal.								
		<table border="1"> <thead> <tr> <th>Existing Capacity</th> <th>Proposed Capacity</th> </tr> </thead> <tbody> <tr> <td>1 X 40 MW Unit</td> <td>1 X 20 MW Unit (Phase-II)</td> </tr> </tbody> </table>	Existing Capacity	Proposed Capacity	1 X 40 MW Unit	1 X 20 MW Unit (Phase-II)				
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1 X 40 MW Unit	1 X 20 MW Unit (Phase-II)									
4.	New / Expansion / Modernization	: Expansion								
5.	Existing Capacity / Area etc.	: The facilities that will be considered common for both the units, existing and proposed at CPL Thermal Power Plant includes the following: <ul style="list-style-type: none"> i Land: The proposed 2nd unit will be installed at the existing designated land area, already acquired. The 2nd unit will be accommodated within balance of plant. The total land area of plant is 32 Ha (79 acres). The Shale, Jhama (Devolatized coal) and washery reject storage and handling system will be similar same as existing system and partly common. ii iii Light diesel oil system iv Raw water intake pump house and reservoir v DM plant vi 132 KV Switchyard 								
6.	Category of Project i.e. 'A' or 'B'	: A (Interstate boundary within 10 km.)								
7.	Does it attract the general condition? If yes please specify.	: Yes, it attracts the general conditions as interstate boundary falls within 10 km radius.								
8.	Does it attract the specific condition? If yes please specify.	: Not Applicable								
9.	Location	: The proposed project site of Thermal Power plant of 20 MW is located at village- Sarashatali, C.D.Block- Barabani, District- Bardhaman, of West Bengal. The elevation of site is approx. 125-136 m (Figure-1).								
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Point	Direction	Latitude	Longitude							
A	West	23°47'0.4"N	87°02'35.7"E							

S. No.	Item	Details			
		B	South	23°46'50.9"N	87°02'53.9"E
		C	South East	23°46'50.0"N	87°03'11.2"E
		D	North	23°47'22.3"N	87°02'53.8"E
		E	North West	23°47'16.6"N	87°02'44.1"E
		F	Central	23°47'06.9"N	87°02'48.2"E
	Plot/Survey/Khasra No.	: Village		Total Survey Nos.	
	C.D.Block	: Sarishatali			
	District	: Bardhaman			
	State	: West Bengal			
10.	Nearest Railway Station / Airport along with distance in kms	: Commercial airport at Kolkata- 190km (SE) Air Base at Panagarh- 58km (SE)			
11.	Nearest Town, city, District Headquarters along with distance in kms.	: Asansol city – 13 km (SW)			
12.	Village Panchayats, Zila Parishad, Municipal Corporation, Local body (complete postal addresses with telephone nos. to be given)	: Barabani Block Development Office Domohani Bazar, West Bengal-713334, India. Contact Person: Block Development Officer M. No. 9163221900 P.No. 0341-2207465 2772218 F.No. 0341-2207465 2772218			
	Zila Panchayat	: Madanpur, P.S. Barabani, Mouza – Jhamuria, District – Bardhaman West Bengal.			
13.	Name of the Applicant	: Mr. Ravi kumar			
14.	Registered Address	: 6, Church Lane, 1 st Floor, Kolkata- 700 001			
15.	Address for correspondence	: Mr. Kausik Biswas			
	Name	: DGM			
	Designation (Owner / Partner / CEO)	: Madanpur, Kapista, Barabani,Asansol,West Bengal			
	Address	: 713315			
	Pin Code	: kaushik.biswas@rp-sg.in			
	E-mail	: 0341 3206489			
	Telephone No.	: 91-033-22483134			
	Fax No.	: No alternative sites is identified as proposed project is expansion of existing 40 MW thermal power plant and will be expanded on the same land that has already been acquired and one more 20 MW plant will be set up.			
16.	Details of alternative sites examined, if any location of these sites should be shown on a toposheet.	: Not Applicable			
17.	Interlinked Projects	: Not Applicable			
18.	Whether separate application of interlinked project has been submitted?	: Not Applicable			
19.	If yes, date of submission	: Not Applicable			
20.	If no, reason	: The proposed project is extension of existing thermal power plant.			

S. No.	Item	Details
21.	Whether the proposal involves approval / clearance under: if yes, details of the same and their status to be given i The Forest (Conservation) Act, 1980. ii The Wildlife (Protection) Act, 1972 iii The C.R.Z. Notification, 1991	: Not Applicable
22.	Whether there is any Government Order / Policy relevant / relating to the site?	: Not Applicable
23.	Forest Land involved (hectares)	: Not Applicable
24.	Whether there is any litigation pending against the project and/or land in which the project is propose to be set up? (a) Name of the court (b) Case No. (c) Orders / directions of Court, if any and its relevance with the proposed project.	: Not Applicable

(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
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	This is an expansion project of existing power plant and there will be no change in the land use.
1.2	Clearance of existing land, vegetation and buildings?	No	This is an extension of existing power plants.
1.3	Creation of new land uses?	No	-
1.4	Pre-construction investigations e.g. bore houses, soil testing?	Yes	Detailed soil investigation will be carried out before commencement of engineering design. Adequate numbers of borehole test shall be carried out at every individual location for heavy static equipment foundation (e.g. ESP, Boiler foundation etc.), vibrating equipment (e.g. TG foundation, crusher

S. No.	Information / Checklist confirmation	Yes / No	Details thereof (with approximate quantities/rates, wherever possible) with source of information data
1.5	Construction works?	Yes	foundation etc.) and major structures and buildings such as chimney, ash silos, cooling structures, TG building, Crusher house etc. Civil work broadly includes site grading, all excavation, back filling, pilling work, concrete work (plain and reinforced), structural steel work, water proofing, roads, drainage, sanitary and plumbing.
1.6	Demolition works?	No	No demolition work.
1.7	Temporary sites used for construction works or housing of construction workers?	No	The construction workers will be accommodated within the existing facilities.
1.8	Above ground buildings, structures or earthworks including linear structures, cut and fill or excavations	Yes	The above ground building structures and linear structures are: (i) ESP Control Room, (ii) Air washer room, (iii) Ash water and ash slurry pump house, (iv) CW pump house etc. Earthwork in excavation by mechanical (hydraulic excavators) /manual means in foundation trenches or drains. i Total Excavation Work : 25,000 cum Filling available excavated earth in trenches, plinth, sides of foundation etc. i Total Filling Work : 15,000 cum
1.9	Underground works including mining or tunneling?	No	-
1.10	Reclamation works?	No	-
1.11	Dredging?	No	-
1.12	Offshore structures?	No	-
1.13	Production & manufacturing processes?	Yes	- At present a power plant of 40 MW is working and one more 20 MW plant is proposed for generation of electricity from combustion of coal washery reject, shale and Jhama.
1.14	Facilities for store of goods or materials?	Yes	- Coal Stockyard for storage of coal, Storage tanks for LDO, Closed Storage yard for chemicals, spare parts, equipments, maintenance tools, etc.
1.15	Facilities for treatment or disposal of solid waste or liquid effluents?	Yes	For solid waste, it is proposed to dispose / reuse as per plan stated below. Ash Utilization: The ash generated in the station will be primarily used for sale in cement plants and brickfields in the locality. It is proposed to use 100% fly ash for commercial use in line with MoEF guidelines. For liquid wastes: The filter backwash water of Pre-Treatment Plant shall be collected and recycled back to the DM system clarifier. The sludge from clarifiers of Water PT plant shall

S. No.	Information / Checklist confirmation	Yes / No	Details thereof (with approximate quantities/rates, wherever possible) with source of information data
			<p>be collected in a sump / pit and shall be pumped to ash slurry sump for disposal to Mines.</p> <p>CW system blow down would be used as make up to Ash handling Plant. The excess blow down if any from CW system and ash water re-circulation system shall be led to Guard Pond & again it used for ash handling plant & dust suppression system.</p> <p>A coal settling pond shall be provided to remove coal particles from coal handling plant waste. Decanted water shall be pumped back to the coal dust suppression system.</p> <p>Sewage from various buildings in the power plant area will be conveyed to septic tanks. The effluents from the septic tank will be disposed off in the soil by providing dispersion trenches. Removed septic tank sludge will be used as land fill.</p>
1.16	Facilities for long term housing of operational workers?	No	No housing facilities will be proposed.
1.17	New road, rail or sea traffic during construction or operation?	No	As it is an operational thermal power plant so an approach road for the plant from the nearby road is already exist and will be used during construction.
1.18	New road, rail, air waterborne or other transport infrastructure including new or altered routes and stations, ports, airports etc.?	No	-
1.19	Closure or diversion of existing transport routes or infrastructure leading to changes in traffic movements?	No	-
1.20	New or diverted transmission lines or pipelines?	No	Existing transmission system will be used for power excavation.
1.21	Impoundment, damming, culverting, realignment or other changes to the hydrology of water courses or aquifers?	No	-

S. No.	Information / Checklist confirmation	Yes / No	Details thereof (with approximate quantities/rates, wherever possible) with source of information data
1.22	Stream crossings?	No	-
1.23	Abstraction or transfers of water from ground or surface waters?	Yes	At present the requirement of Potable water, Service water and DM water will be catered from filtered water tank of 80 cum. For Phase-II (Expansion) one more filter water tank of 200 cum will be installed. The required water is abstracted from Ajay river.
1.24	Changes in water bodies or the land surface affecting drainage or run-off?	No	Not significant as water study report of Ajay River, indicates sufficient water is available to cater the need of the project.
1.25	Transport of personnel or materials for construction, operation or decommissioning?	Yes	Transport of construction materials and personnel will be done by tippers / covered trucks.
1.26	Long-term dismantling or decommissioning or restoration works?	No	-
1.27	Ongoing activity during decommissioning which could have an impact on the environment?	No	-
1.28	Influx of people to an area in either temporarily or permanently?	Yes	Temporary construction workers will be accommodated in the existing facilities. 25 skilled and 100 unskilled workers will be locally recruited.
1.29	Introduction of alien species?	No	-
1.30	Loss of native species or genetic diversity?	No	-
1.31	Any other actions?	No	-

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	It is an operational 40 MW thermal Power Plant and is developed industrial area which is planned for expansion of one more 20 MW plant.
2.2	Water (expected source & competing	Yes	Water requirement for both unit 355 m ³ /hr /

S. No.	Information / Checklist confirmation	Yes / No	Details thereof (with approximate quantities / rates, wherever possible) with source of information data
	users) unit : KLD		8520 KLD. Source of water will be Ajay river.
2.3	Mineral (MT)	Yes	<p>Currently, the waste generation in the form of Shale is 0.25 million ton per annum from the mine and another 0.4 to 0.5 million ton per year of rejects from the washery (i.e. total fuel is 0.75 MTPA) meets the requirement of existing 40 MW thermal power plant.</p> <p>For extension unit of 20 MW 0.4-0.5 million tons of washery reject, 0.25 million tons of Shale and 0.15 million tons of fuel per annum will be available from ICML mine.</p>
2.4	Construction material – stone, aggregates, and/soil (expected source – MT)	Yes	<p>LDO will be used for Cold Boiler start up only. Construction Materials to be procured from the local market and 2500 MT civil material will be used during construction.</p>
2.5	Forests and timber (source – MT)	No	
2.6	Energy including electricity and fuels (source, competing users) Unit: fuel (MT), energy (MW)	Yes	<p>Currently, the waste generation in the form of Shale is 0.25 million ton per annum from the mine and another 0.4 to 0.5 million ton per year of rejects from the washery (i.e. total fuel is 0.75 MTPA) meets the requirement of existing 40 MW thermal power plant.</p> <p>For extension unit of 20 MW 0.4-0.5 million tons of washery reject, 0.25 million tons of Shale and 0.15 million tons of fuel per annum will be available from ICML mine.</p> <p>LDO will be used for Cold Boiler start up only.</p>
2.7	Any other natural resources (use appropriate standard units)	No	-

- 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
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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)	Yes	LDO
3.2	Changes in occurrence of disease or affect disease vectors (e.g. insect or water borne diseases)	No	
3.3	Affect the welfare of people e.g. by changing living conditions?	Yes	As it is an operational Thermal power plant so already it is a developed industrial area and with the extension project it will bring beneficial impact on the local people in terms of commercial ventures and employment. Occupational health and medical check-up of workers would be regularly done as per statute.
3.4	Vulnerable groups of people who could be affected by the project e.g. hospital patients, children, the elderly etc.,	No	-
3.5	Any other causes	No	-

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	
4.2	Municipal waste (domestic and or commercial wastes)	Yes	At present 10 kg/day of solid waste from Canteen is generated which is not going to increase and the generation will remain same after extension.
4.3	Hazardous wastes (as per Hazardous Waste Management Rules)	Yes	Used oil, paints, lead batteries and accidental leakage of oil. These will be disposed off as per CPCB/MoEF guidelines.
4.4	Other industrial process wastes	Yes	Ash only and that will be primarily used for sale in cement plants and brickfields.

S. No.	Information / Checklist confirmation	Yes / No	Details thereof (with approximate quantities / rates, wherever possible) with source of information data
4.5	Surplus product	No	Complete utilization of ash may thus be assured.
4.6	Sewage sludge or other sludge from effluent treatment	Yes	-
4.7	Construction or demolition wastes	Yes	There will be minimum generation of sewage sludge only.
4.8	Redundant machinery or equipment	Yes	There will not be any demolition work so no waste generation and the construction waste will be used for landfill.
4.9	Contaminated soils or other materials	Yes	The redundant machinery if any shall be stored separately and will be sold to approved recyclers, which is followed presently.
4.10	Agricultural wastes	Yes	Contamination in soil may be due to the accidental leakage of fuels only
4.11	Other solid wastes	No	Not applicable
		Yes	Ash only and that will be primarily used for sale in cement plants and brickfields. Complete utilization of ash may thus be assured.

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 form combustion of fossil fuels from stationary or mobile sources	Yes	<p>Emission of dust and gases like NO₂, SO₂ etc. ESP, Low NO_x burners and other measures will be taken care to limit the emission within the prescribed norms.</p> <table border="1"> <thead> <tr> <th colspan="2">Existing</th> <th colspan="2">After Extension</th> </tr> </thead> <tbody> <tr> <td>SPM</td> <td>30 x 2 = 60 µgm/Nm³</td> <td>SPM</td> <td>30 x 3 = 90 µgm/Nm³</td> </tr> <tr> <td>SO_x</td> <td>600 x 2 = 1200 µgm/Nm³</td> <td>SO_x</td> <td>600 x 3 = 1800 µgm/Nm³</td> </tr> <tr> <td>NO_x</td> <td>500 X 2 = 1000 µgm/Nm³</td> <td>NO_x</td> <td>500 X 3 = 1500 µgm/Nm³</td> </tr> </tbody> </table>	Existing		After Extension		SPM	30 x 2 = 60 µgm/Nm ³	SPM	30 x 3 = 90 µgm/Nm ³	SO _x	600 x 2 = 1200 µgm/Nm ³	SO _x	600 x 3 = 1800 µgm/Nm ³	NO _x	500 X 2 = 1000 µgm/Nm ³	NO _x	500 X 3 = 1500 µgm/Nm ³
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5.2	Emissions from production processes	Yes	<p>Emission of dust and gases Like NO_x, SO₂ etc.</p> <p>Continuous Emissions Monitoring System (CEMS) for monitoring of Flue gas emissions from the stacks of the plant will</p>																

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5.3	Emissions from materials handling including storage or transport	No	<p>be provided for monitoring.</p> <p>Not anticipated with usage of dust extraction and suppression system in ash silo, coal transfer point and coal bunkers. Also closed conveyors will be used in fuel transportations.</p> <p>Bag filter in material transfer tower and water spray in area of dust generation.</p>																
5.4	Emissions from construction activities including plant and equipment	Yes	Regular water sprinkling will be done at the project to minimize the dust emission during construction phase.																
5.5	Dust or odors from handling of materials including construction materials, sewage and waste	Yes	Fugitive dust emission due to earth work. Gaseous emission due to machineries operations																
5.6	Emissions from incineration of waste	No	No incineration facility is proposed at site.																
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	Not applicable																

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
6.1	From operation of equipment e.g. engines, ventilation plant, crushers	Yes	Noise would be generated generally from steam turbine, generator, compressors, pumps, fans, coal handling plant etc. but all the equipment will be designed and if required acoustic materials will be provided to have the noise level not to exceed the values as stipulated in CPCB/MoEF norms.

S. No.	Information / Checklist confirmation	Yes / No	Details thereof (with approximate quantities / rates, wherever possible) with source of information data
6.2	From industrial or similar processes	Yes	Noise will be generated from dump transportation of material/ machine.
6.3	From construction or demolition	Yes	Operation of the HEMMs will generate a noise level upto 110 dB. The noise level will match to ambient level at plant boundary due to atmospheric attenuation and masking effects. The noise generated due to constructional activities will be limited to site only.
6.4	From blasting or piling	No	No blasting is proposed at the project site
6.5	From construction or operational traffic	Yes	Slight increment in the noise level is expected due to increase in vehicular traffic due to constructional activities and coal transportation traffic.
6.6	From lighting or cooling systems	Yes	No noise generating cooling system required.
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 or hazardous materials	No	
7.2	From discharge of sewage or other effluents to water or the land (expected mode and place of discharge)	Yes	Plant will follow the zero discharge concept.
7.3	By deposition of pollutants emitted to air into the land or into water	No	The project with this capacity will not have a significant impact on air environment and level of pollutants will remain well within the standard stipulated by CPCB.
7.4	From any other sources	No	-
7.5	Is there a risk of long term build up of pollutants in the environment from these sources?	No	As proper mitigative measures of dust control will be incorporated so that there is no risk in long term

- 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	Yes	An assessment of conceptual design will be conducted to minimize the risk of fire at the coal stockyard, LDO storage tank. All safety rules as laid down by concerned authorities will be complied.
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	There is no risk of flooding to the project site. There will be moderate probability of earthquake as the area falls in Zone-III (as per Seismic Classification)

- 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.: Supporting infrastructure (roads, power supply, waste or waste water treatment, etc.) Housing development Extractive industries Supply industries Other	Yes	The project will be having ancillary and supporting activities such as: construction of roads, sewerage system etc. which will bring positive change in the locality.
9.2	Lead to after-use of the site, which could have an impact on the environment	Yes	- It is an expansion project of already industrially planned area.
9.3	Set a precedent for later developments	Yes	- Later development will be taken into consideration.
9.4	Have cumulative effects due to proximity to other existing or planned	No	-

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

(III) ENVIRONMENTAL SENSITIVITY

S. No.	Areas	Name/ Identity	Aerial distance (within 15km) Proposed project location boundary
1	Areas protected under international conventions, national or local legislation for their ecological, landscape, cultural or other related value	No	-
2	Areas which are important or sensitive for ecological reasons –Wetlands, watercourses or other water bodies, coastal zone, biospheres, mountains, forests	Water Bodies Forest	Ajay river 3.5Km (NE) Protected forests are within the study area in North, North West and North East direction.
3	Areas used by protected, important or sensitive species of flora or fauna for breeding, nesting, foraging, resting, over wintering, migration	None	-
4	Inland, coastal, marine or underground waters	None	-
5	State, National boundaries	State Boundary	Jharkhand- 3.5 km (NE)
6	Routes or facilities used by the public for access to recreation or other tourist, pilgrim areas	None	-
7	Defence installations	None	-
8	Densely populated or built-up area (considering population of the villages greater than 1000)	None	-
9	Areas occupied by sensitive man-made land uses (hospitals, schools, places of workshop, community facilities)	Yes	Asansol is 13km (SW) away and it is a densely populated town, there are various schools and hospitals in the area. There are no major archaeological, historical or religious sites located nearby project site.
10	Areas containing important, high quality or scarce resources (ground water resources, surface resources, forestry,	Minerals	Coal mine belt is within the study area spread from NW to E direction.

S. No.	Areas	Name/ Identity	Aerial distance (within 15km) Proposed project location boundary
11	agriculture, fisheries, tourism, minerals) Areas already subjected to pollution or environmental damage (those where existing legal environmental standards are exceeded)	None	-
12	Areas susceptible to natural hazard which could cause the project to present environmental problems (earthquakes, subsidence, landslides, erosion, flooding or extreme or adverse climatic conditions)	None	The site is located in seismic zone III i.e. moderate damage risk zone. So there will be no major effect of natural hazards on the project.

Note-The Environment Sensitive locations are presented in details for point 1 to 9 in **Figure-2**.

(IV) PROPOSED TERMS OF REFERENCE FOR EIA STUDIES

- Project : 20 MW Extension Project, Phase II
Coal Washery Reject, Shale And Jhama Coal Based Thermal Power Project.
- Category : **A [1(d)]**
- Project Proponent : **Crescent Power Limited**
- Location : Village- Sarishatali, C.D Block- Barabani, District- Bardhaman, State- West Bengal.

Introduction: Crescent Power Limited (CPL), a subsidiary of integrated Coal Mining Ltd (ICML), a group company of CESC Ltd. (RP-SG Group Company), is engaged in generation of Power through its Sarishatali Power Plant. CPL proposes to enhance generating capacity of this station by utilizing additional fuel resource available from ICML.

Integrated Coal Mining Limited (ICML) promoted by M/s CESC Ltd, has developed a captive coal mine block in Sarishatali, Bardhaman district, West Bengal and has washery with capacity 1 MTPA in close proximity of Sarishatali mine, which is supplying washery Reject and Shale in existing atmospheric fluidized bed combustion furnaces (also known as bubbling bed combustion furnace) for the present 1 X 40 MW power plant, being installed by Crescent power Ltd. (CPL) at Sarishatali.

Currently, the waste generation in the form of shale is as high as 0.25 million ton per annum from the mine and another 0.4 to 0.5 million ton per year of rejects from the washery (ie. Total fuel is

0.75 MTPA), which meets the requirement for present plant. The mine also has substantial quantity of Devolatised coal (Jhama coal) of volatile matter content of 8-10 % which has high carbon content and is not suitable for pulverized fuel – fired boiler, but can be burnt in AFBC or CFBC boilers.

Approximately 0.4-0.5 million tons of washery reject, 0.25 million tons of shale and 0.15 million tons of fuel per annum are available from ICML mine and coal washery for a maximum period of 15 years. With the above waste coal, one additional 20 MW unit with PLF 80% at the same site is possible.

EIA METHODOLOGY: The EIA Report will address all the Terms of Reference and will be prepared in accordance to the Environment Protection Act 1986 and EIA Notification 2006 published by Ministry of Environment and Forests, Govt. of India dated 14th September 2006 and further amendments thereof. It will form part of the application to the Statutory Authority.

SITE & STUDY AREA: The project is an extension project of an operational thermal power plant of 40 MW capacity at Sarishatali, Asansol, West Bengal. It has been proposed to add another unit of 20 MW capacity. The project site is located at longitude 87°2'48.2"E and latitude 23°47'06.9"N. The existing power plant is located near Ajay River. The plant covers an area of **32 hectare** (79 acres). The proposed unit will be established within the same boundary where the operational plant is located.

The project site is located about 11.5 km from the district road which is connected to NH-2. Asansol is the nearest city 13 km (SW) from the project site. Table below shows coordinates of the project site. The elevation of site is approximate between 125m - 136m. The Project location and study area for EIA study are shown as Figure 2 and 3 respectively.

Point	Direction	Latitude	Longitude
A	West	23°47'0.4"N	87°2'35.7"E
B	South	23°46'50.9"N	87°2'53.9"E
C	South East	23°46'50.0"N	87°3'11.2"E
D	North	23°47'22.3"N	87°2'53.8"E
E	North West	23°47'16.6"N	87°2'44.1"E
F	Central	23°47'06.9"N	87°2'48.2"E

PROJECT DESCRIPTION

Project Rationale: This section will highlight the goals and objectives of the proposed expansion of thermal power plant of 1 X 20 MW project. It will also include discussion on the significance of the project in terms of the need for the project in the local as well as the national level. It will also highlight the proposed project in line with existing development plans of the State and Central government and in accordance with the existing or envisioned land use plans.

Project Location: This section will discuss the geographic location of the project. The location of the project will clearly define geographical features (e.g. watersheds, national parks / protected areas, military reservations, etc.) and the general access to the project site (e.g. presence of existing road networks, feeder roads, etc.).

Project Information / Process Information: This portion will include the following

- Statement of the Official name of the project and name/s of proponents (including address, telephone nos., etc.) responsible / liable;
- Vicinity Plan, Processes involved, Site layout, water balance diagram
- Project cost and area
- Resource / Manpower requirements
- Time frame for project implementation

Process Description: The technology to be used for the project and the process components of the project focusing on the materials input and output from the process components including products, fuels, feedstock and utility requirements (gas, electricity, steam and cooling water will be provided. Material balances (also energy balance); flow diagrams and descriptions of the process to be used will also be provided. The process emissions including air, liquid, and associated wastes, and associated pollution abatement equipment will be discussed.

Pre-Construction: This section shall discuss / describe the various components of the projects. This section shall also discuss the major activities to be undertaken during the construction phase, which shall include but not be limited to:

- Site mobilization
- Road construction / improvement
- Camp construction
- Site clearing
- Construction of the major facilities / project components
- Construction of support services e.g. Water & Power supply & Tele-communications, etc.

Operation: This section shall discuss the activities to be undertaken during the operation, which shall include but not limited to:

- Major maintenance activities
- Manpower requirements
- Fuel Requirement
- Energy requirements

BASELINE ENVIRONMENTAL SCENARIO:

Description of the existing environment, assessment of historical trends of environmental data specific to the proposed site and description of the socio-economic setting in the area will provide an overall picture of the proposed site before any development activities are undertaken. Thus, equipped with the knowledge of the existing environment and aware of the specifications of the proposed project as described in the preceding sections will be identified and areas of critical importance and impacts of the project can be reliably predicted.

Finally, methodologies used in the data collection (primary data) shall be briefly discussed with the corresponding interpretation of the data obtained. Likewise, all sources of information (secondary data) shall be identified and appropriately acknowledged.

Study Modules	Scope and Coverage	Methodology (Type and Source)
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Study Modules	Scope and Coverage	Methodology (Type and Source)
Inland Topography	<ul style="list-style-type: none"> • Landform Pattern 	<ul style="list-style-type: none"> • Slope and elevation
Soils	<ul style="list-style-type: none"> • Soil physical and chemical characteristics / analysis 	<ul style="list-style-type: none"> • Primary soil survey and analysis
Hydrology	<ul style="list-style-type: none"> • Groundwater table • Drainage systems 	<ul style="list-style-type: none"> • Characterization of inland surface water
Meteorology / climatology	<ul style="list-style-type: none"> • Wind and Rainfall pattern • Frequency distribution of wind direction • Temperature • Associated atmospheric pressure 	<ul style="list-style-type: none"> • Primary data collection • Secondary data from nearest IMD station
Air Quality	<ul style="list-style-type: none"> • Ambient air quality • PM₁₀, PM_{2.5}, SO₂, NO_x and CO 	<ul style="list-style-type: none"> • Identification of air pollution sources • Air quality measurements
Water Quality	<ul style="list-style-type: none"> • Surface and Ground water characteristics • Physico-chemical and Bacteriological characteristics 	<ul style="list-style-type: none"> • Sampling and analysis of surface and ground water
Noise Level	<ul style="list-style-type: none"> • Ambient noise levels at the project sites and nearby community 	<ul style="list-style-type: none"> • Noise quality measurement
	<ul style="list-style-type: none"> • 	<ul style="list-style-type: none"> •
Flora	<ul style="list-style-type: none"> • Summary of vegetative cover 	<ul style="list-style-type: none"> • Primary ecological survey supported by secondary data collected from regional forest office
Fauna	<ul style="list-style-type: none"> • Terrestrial fauna species inventory survey 	<ul style="list-style-type: none"> • Primary ecological survey supported by secondary data collected from regional forest office
Demography	<ul style="list-style-type: none"> • Population size • Population density, household size • Population by gender • Literacy rate • Occupation and employment status 	<ul style="list-style-type: none"> • Principal data from Census
Other Social Services	<ul style="list-style-type: none"> • School facilities • Telecommunications, water and power facilities 	<ul style="list-style-type: none"> • Principal data from Census
Transportation	<ul style="list-style-type: none"> • Network and mode of transportation 	<ul style="list-style-type: none"> • Identification of main and access roads, mode of transportation

ASSESSMENT OF ENVIRONMENTAL IMPACTS: There shall be an assessment on feasibility and cost-effective measures to prevent or reduce significant negative environmental impacts identified, to an acceptable level. In this section, the following aspects will be assessed:

- The project component and development activities that result in discharges to the environment and the effect of these on the environment
- Existing conditions in the site area, including existing land-use, resources and other activities, which in combination with the project activity having potential to affect the environment.
- Anticipated environmental effects

This chapter will include appropriate tables and figures to illustrate and summarize the key Information that is relevant in understanding the environmental and socio-economic environment.

The environmental and socio-economic impact of the proposed project having regard for regional and cumulative effects will be presented. Wherever possible, the impacts will be quantified. This section will also include measures to address emergency response requirements for accidental events and also estimate costs of those measures and of the institutional training requirements to implement them.

The existing air quality of the region and the impact of the proposed project on regional air quality will be discussed. The component of the project, which will affect **air quality**, will be identified. Also the ways and means of reducing the air emissions impact will be discussed.

Project activities during construction and operation phases that will affect **noise levels** and the potential for increased noise resulting from this project will be presented. The effect on noise levels during the construction and operation phase will be ascertained.

The project activities that will affect **surface water and ground water** will be identified. Any water minimization considerations will be included. The quantity and source of wastewater will be presented including a summary of water quality effects and possibility of recycling. Future **waste management** projections, storage and disposal plans and locations will be discussed. The quantity and composition of any waste including solid and hazardous wastes produced will be estimated and classified.

Land-use and Socio-economic information will also be provided. The impact on the resources and the present population will be highlighted. This will include the effects on employment, livelihood, economy and infrastructure.

Resource/ Environment	Construction Phase	Operation / Maintenance Phase
	Impact	Impact
Land	<ul style="list-style-type: none"> Modification of land forms 	<ul style="list-style-type: none"> Change in present form
Water	<ul style="list-style-type: none"> Change in quality of surface and groundwater 	<ul style="list-style-type: none"> Change in quality of water bodies if required
Air Quality	<ul style="list-style-type: none"> Dust generation Change in concentration of pollutant gases 	<ul style="list-style-type: none"> Change in level of gaseous pollutants i.e. TSP, SO₂ and NO_x
Noise	<ul style="list-style-type: none"> Change in noise level 	<ul style="list-style-type: none"> Change in noise level from various sources such as aircraft operation, maintenance and flight
Wastewater / Solid waste management	<ul style="list-style-type: none"> Wastewater / Solid waste management 	<ul style="list-style-type: none"> Solid waste management Wastewater management
Socio-economic	<ul style="list-style-type: none"> Change in employment pattern Change in Infrastructure facilities 	<ul style="list-style-type: none"> Change in economy of the region Employment benefits

ENVIRONMENTAL MANAGEMENT PLAN: Environment Management Plan will address all the relevant issues like Land Management, Noise pollution, Air emissions, Water Management, Hazardous materials management, Waste Management besides landscape plan and Rain water harvesting.

Monitoring Program: The EIA shall contain a monitoring program for parameters included in the baseline studies. An Environmental Monitoring Plan containing the following information would serve as a guide in the monitoring activities.

- Frequency of sampling and sampling points
- Sampling parameters
- Sampling should be done at the same locations as in the baseline data survey and at effluent release points to check whether permissible requirements are met.
- Work and financial plan for the current year

The chapter would describe the project cost towards environment protection.

Information, Education and Communication (IEC) Plan

Plans for Informing, educating and communicating with the State Government and the community regarding the project and its implementation of the EMP should be presented.

Contingency / Emergency Response Plan: Procedures on how to cope with emergencies / accidents shall be outlined in a comprehensive contingency / emergency response plan. The institutional responsibilities will be made clear and the flow of communication in cases of emergencies will be included.

UNDERTAKING BY PROJECT PROPONENT

I hereby given 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.

Date :

Place : Asansol

Name of Authorized Signatory : Mr. Kausik Biswas

Designation : DGM

**Full Address : Madanpur, Kapista, Barabani,Asansol
West Bengal , Pin- 713315**

Note:

1. The projects involving clearance under Coastal Regulation Zone Notification, 1991 shall submit with the application a C.R.Z map duly demarcated by one of the authorized agencies, showing the project activities, w.r.t C.R.Z (at the stage of TOR) and the recommendations of the State Coastal Zone Management Authority (at the stage of EC). Simultaneous action shall also be taken to obtain the requisite clearance under the provisions of the CRZ notifications, 1991 for the activities to be located in the CRZ.
2. The Projects to be located within 10km of the National Parks, Sanctuaries, Biosphere Reserves, Migratory Corridors of Wild Animals, the project proponent shall submit the map duly authenticated by Chief wildlife Warden showing these features vis-a-vis the project location and the recommendations or comments of the Chief Wildlife Warden thereon (at the stage of EC).
3. All correspondence with Ministry of Environment & Forests including submission of application for the TOR/Environment Clearance, subsequent clarifications, as may be required from time

to time, participation in the EAC Meeting on behalf of the project proponent shall be made by the authorized signatory only. The authorised signatory should also submit a document in support of his claim of being an authorised signatory for the specific project.