

IND BARATH ENERGY UTKAL LIMITED

Form- A

Form for seeking Approval Under Section 2 of the proposals to State Government and Other Authorities.

PART - I

(To be filled by the User Agency)

1. Project Details:

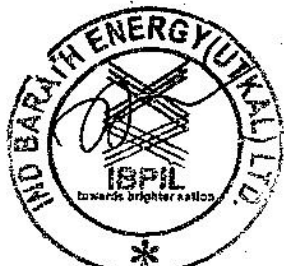
- i) **Short Narrative of the proposal and project/scheme for which the forest land is required:**

Electricity is a vital input for economic and social development of our society. Adequate and quality power is essential to fuel this growth and all efforts need to be made to ensure that sufficient power is available. The Government's mission is to provide quality and reliable power to all by 2012.

The Installed Generating Capacity in the country which was only 1,358 MW at the time of Independence has reached to a level of 1, 27,673 MW comprising 83,982 MW thermal 33,600 MW hydro, 3900 MW nuclear and 6191 MW from wind and other renewable energy sources. There has been corresponding growth in transmission and distribution network too. The target set for capacity addition during the 10th plan was 41,110 MW, But capacity of 30,641 MW could be achieved during the 10th plan period. As per the 11th plan capacity addition for about 66,463 MW is required during the 11th plan and about 86,500 MW during the 12th plan.

The Electricity Act 2003 envisages a strong push to the structural reforms, de-licensing, thrust on rural electrification, incentives to reforming States and importantly, mandatory metering with stringent penal provisions for punishment for theft of electricity. The publication of the National Electricity Policy in February 2005 is an important milestone.

For the successful implementation of the power expansion plan, It is essential that all the key inputs required are made available as per the schedule of their requirement for each individual power projects. Since these are some of the major key inputs, an assessment requirement for the 11th and 12th plan power projects will be useful input for the manufacturers and suppliers. In this booklet a broad overview has been provided about the requirement of electric power & steel during the 11th & 12th plan for establishment of industries. Odisha is endowed with a large potential of valuable mineral resources like Coal, Iron ore and Bauxite. Efficient utilization of these mineral resources will lead to development of basic and core industries, which is the backbone of the development of the State. Government of Odisha has created a congenial atmosphere to facilitate for the efficient utilization and value addition of these minerals resources



B. S.
Divisional Forest Officer
Sambalpur North Division

through establishment of industries in Odisha which will ultimately brought prosperity and development of the state. Besides development, energy security is also a major factor for industrialization and human development.

Odisha is a major part of the eastern Region electricity Grid comprising the States of Odisha, Bihar, Jharkhand, Sikkim and West Bengal,. By the end of 10th plan (2002-2007), The total capacity addition during the 10th plan for the State is negligible. Out of the total installed capacity of the State thermal power generation Constitutes approximately 45.5%.

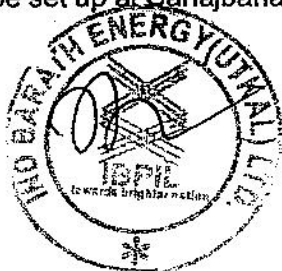
Demand for electricity is steadily increasing in the State and in other regions due to rapid industrialization and large scale use of electricity for commercial purpose. 2007 to 2012 will be around 5.37


According to sixteenth electric power survey carried about by CEA, the rate of growth in energy requirement in Odisha for the period from 2007 to 2012 will be around 5.37% per annum.

Based on the details of load forecast and assessment of generation capacity, it is anticipated that the odisha would experience a deficit of 954 MW in peak power and 5844 MW in Energy by the year 2011-2012. On similar lines India will experience a deficit of peak power about 49550 MW or 176799 MU by the end of the year 2012. This deficit is expected to increase substantial in the subsequent years. Keeping in mind the development of the overall economy and to reach to the poor people of the country the new electricity policy of the centre is to provide power for all by the year 2012.

Ind Barath Energy Utkal Limited took part in the holistic effort of the Govt of Odisha and planned its capacity addition over the years. After undertaking due feasibility studies the Ind Barath Ebergry Utkal Limited signed a MoU with the Govt of Odisha for setting up a 700 MW Thermal Power Plant in the villages of Sahajbahal, Barpali under Lakhanpur Tahasil which is situated at a distance of 45 Kms from Jharsuguda. The copy of the MoU signerd with the Government of Odisha is attached as Annexure-I. The site is shown in Topo sheet No. 64 O/14 having Latitude 83° 55'28" WE to 83° 56'16" E and longitude 21° 39' 28" N-to 21°40' 16" in Survey of India Topo sheet No. F44 r14 (1:50,000) Scale.

The Proposed location is adjacent to Belpahar Railway Station and on the broad gauge line of the East coast Railway running between Jharsuguda and Raipur section. The total area required for the proposed plant measuring 239.9 Ha. (592.8 Ac) has been identified in the above two villages. The salient features of the proposed power plant to be set up at Sahajbahal village of Jharsuguda District are as follows,




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Sambalpur North Division

| | |
|------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------|
| Geographical Location Sahajbahal, Jharsuguda, Odisha | Latitude 83°55'28" E - 21°39'06" N |
| Power Generation | 700 MW |
| Raw Materials (thermal Grade Coal) | 12.5 MTPA |
| Total Land Requirement for the Project | 239.9 Hectares |
| Net Water Requirement from the river Mahanadi | 28 Cusecs, @ 400 M ³ /Hr, per MW Approx. |
| Power Evacuation | The total generation will be evacuated through 400 KV, PGCIL Rourkela-Raigarh D/c Line by LILO arrangement at Belpahar Loc No.761 |
| Railway | Raipur-Jharsuguda Line is passing adjacent to our project site with Belpahar Station nearer to our project site |

As such the total land required for the entire project is 592.8 Ac (239.9 Ha). The abstract of land required for the project is as below.

Abstract Statement of required Land for the Project

| Village | Communal | Forest | Govt | Pvt Land | Total | Unit |
|--------------|----------|--------|-------|----------|--------|------|
| Sahajbahal | 15.52 | 54.11 | 3.40 | 395.91 | 468.94 | Ac |
| Barpali | - | 34.81 | - | 89.05 | 123.86 | Ac |
| Total in Ac | 15.52 | 88.92 | 3.40 | 484.96 | 592.80 | Ac |
| Total in Ha. | 06.28 | 35.985 | 1.375 | 196.26 | 239.90 | Ha. |

As per the technical requirement of the plant and land available with the Company an area of Ac.88.92 dec. (35.985 Ha) located in 41 patches within the non-forest land few of the components of various units of the power plant will be located on this forest land as per the feasibility constraints. The abstract of the forest land in different revenue villages as as below,



Raj
 Divisional Forest Officer
 Division

| Village | Gramya Jungle | Patra Jungle | Total | Unit |
|---------------------|---------------|--------------|---------------|------------|
| Sahajbahal | 32.51 | 21.60 | 54.11 | Ac |
| Barpali | 34.81 | 0.00 | 34.81 | Ac |
| Total in Ac. | 67.32 | 21.60 | 88.92 | Ac |
| Total in Ha. | 27.244 | 8.741 | 35.985 | Ha. |

As per the preliminary survey conducted the total tree enumeration in the proposed area is only seven in numbers and therefore there is no physical forest as such in the forest area. Still all possible steps shall be taken to preserve the existing tree growth standing over the project area and trees will not be felled unless warranted. This has been shown in the land use map of the project as open space to act as green belt in and around the project area.

Forest Land required for this project does not include any national park, Wildlife Sanctuary, Biosphere Reserve and Elephant corridors. The area does not have any rare or endangered species of fauna. No archaeological monuments are located inside the proposed area. There are nine families to be displaced from the proposed project area & no forest land shall be utilized for rehabilitation of oustees and construction of houses for dwelling purpose by the Ind Barath Energy Utkal Limited.

Orissa Industrial Infrastructure Development Corporation (IDCO) an undertaking of Government of Odisha is entrusted to facilitate acquisition land required for this industry as per the OIIDC Act 1980. Now it is proposed to divert this Ac.88.92 dec (35.985 Ha) of forest land under the provision of section-2 of of forest (Conservation) Act'1980 and under Rule 2 (h) and 6 of forest (Conservation) Rules'2006 for the purpose of establishment of a coal based Thermal Power Plant of 700 MW at Sahajbahal of Jharsuguda District by the Ind Barath Energy Utkal Limited, who has signed the Memorandum of Understanding (MoU) with the Government of Orissa. The copy of Mou is attached as Annexure-1.

(ii) Map showing the required Forest land, Boundary of adjoining forest area on 1:50,000 scale.

The desired maps on Revenue Village sheet and Topo sheet are enclosed.



R. S. S.
 Divisional Forest Officer,
 Sambalpur North Division

(iii) Cost of the Project:

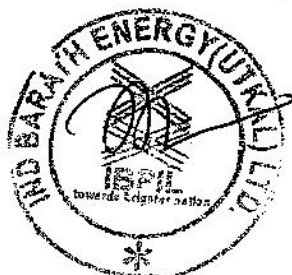
| SI No. | ITEMS | Cost in Rs. Million- PHASE- 1 | | | % of total Project cost |
|--------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------|--|--|-------------------------|
| 1 | Direct and Indirect Cost | | | | |
| 1.1 | Land preliminary works and civil/structure works which includes the total cost acquiring the forest and non forest land green belt development and cost of R & R etc. | 1164.351 | | | 3.50 |
| 1.2 | Mechanical works | 1366.424 | | | 8.20 |
| 1.3 | Electrical works | 1043.838 | | | 6.26 |
| 1.4 | Other cost including C & I & Construction engineering cost | 11577.11 | | | 72.76 |
| 1.5 | Total direct and indirect cost | 15151.73 | | | 90.72 |
| 2 | Interest during construction | 1546.536 | | | 9.28 |
| 3 | Total project cost | Rs.31850 million | | | 100 |
| 4 | Capital cost per MW | Rs.4.50 crores | | | |

(iv) Justification for locating the Component:

Based on Techno-economic and environment consideration, Cethar Consulting Engineers (CCE) recommended the establishment of the proposed power plant at Sahajbahl, the criteria considered for selecting the site among all other possible locations shown below,

The main criteria of site selection are:

- Location close to coal mines site within the state.
- Possible locations of Thermal power within a radius of 100 Km from IB Valley coal Deposits.
- Near to a perennial source to meet the water requirement.
- Availability of infrastructure facility like rail, road, port, electricity, communication facility and developed township.



B. Chh
 Divisional Forest Officer
 Sambalpur North Division

Availability of adequate land area with only displacement of three people.

- In significant Forest area and minimum loss of forest cover.
- Easy to transport bulk raw material.
- Facilities to evacuate Power through national Grids.

Proximity to the market growth centre and existence of an established industrial Atmosphere.

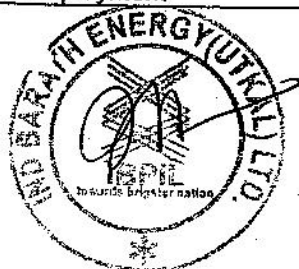
- Availability of skilled manpower.
- Growth opportunity and expandable regional economy.

With these required criteria for selection of a suitable site, preliminary studies were undertaken based on the survey of India maps, revenue maps, available drawing & technical data. Engineers zeroed Sahajbahal site as it is the best suitable site for setting up a Thermal Power Plant of 700 MW capacity.

V) Cost – Benefit Analysis: The Economic analysis/cost Benefit Analysis of the Project incorporating the socio economic and Environmental cost are presented is enclosed and the abstract of it is presented below.

Salient Features:

| | |
|------------------------------------------------------------------------------------------|-----------------------------|
| Proposed investment | 3185.00 Crores |
| Total land required | 239.9 Ha |
| Period of investment | Three Years |
| Internal rate of Return (After Tax) | 14% |
| Minimum Expected return | 14% |
| Proposed Capacity | 700 MW (2X350) |
| Expected project life including periods of construction | 25 Years |
| Expected output within project period. (at 85% PLF & Aux Power Consumption. | 120327 Million Units |
| Expected value of Power to produced with in Project Period | Rs.25770.60 Crores (Approx) |
| Gross value addition or contribution to National income with in project period | Rs.25770.60 Crores (Approx) |
| Expected total contribution towards central taxes within project period at current price | Rs.1055.00 Crores (Approx) |
| Expected total contribution towards State taxes a within project period | Rs.4024.00 Crores (Approx) |
| Direct Employment | 300 persons |
| Indirect employment | 600 persons |



[Handwritten Signature]
 Director
 Sahajbahal Thermal Power Station

VI) Employment likely to be generated:

It is estimated that nearly 1500 persons will be employed in this project during its construction phase. During operation the total manpower required will be around 900 out of which nearly 300 will be directly employed 600 through indirect employment.

VII) Raw material (coal)

The main raw material for the thermal power plant is coal & water. For the operation of the proposed plant coal will be sourced from the IB valley coal fields under the Ministry of Coal Government of India has sanctioned coal linkage in favour of Ind Barath Energy Utkal Ltd. For the quantity of 12.5 MTPA. Letter of coal linkage is attached.

VIII) Water

The water required for the proposed projects are to be met from the river Mahanadi. The total water requirement for the project will be 28 Cusecs.

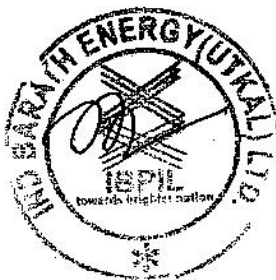
The total water requirement has been already assured by the Water Resources Department of Govt. of Odisha. Presently 2 Cusecs of construction water has been allocated to the industry from Hirakud reservoir. Allocation letter attached.

IX) LDO/HSD/FO transportation

The oil required for the proposed plant will be transported by road through trucks. For this purpose the NH-200 will used up to Jharsuguda and from Raipur.

X) Power Evacuation

The power generated from proposed project will be partly sold to GRIDCO (25%) and the balance (75%) will be sent out to Western and Northern grid through PGCIL as attached.



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**Divisional Forest Officer,
Sambalpur North Division**

XI) Construction Power

The construction Power for the project will be around 2 MW- 5 MW over the three year period and the same will be sourced from WESCO through 33 KV/220V Line sub-station near Bandhabahal. Necessary permission in this regards has already been availed from WESCO. The copy of the permission attached.

XII) Water Line

The water planned to be drawn from river Mahanadi / Hirakud reservoir will be through 1000 mm dia pipeline. As per initial estimate the pipeline will be laid inside the plant boundary as the Hirakud reservoir is adjacent to the plant acquired area. No land needs to be acquired for the laying of the pipeline beyond plant boundary.

XIII) Ash Generation and Utilization

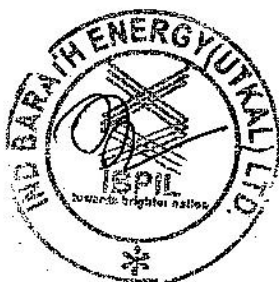
The Ash generated from the plant proposed plant will be utilizes in phased manner as per the directives and norms set by MOEF and state pollution control board. The company proposes setting up a cement grinding unit for disposal of ash from the project. The Fly Ash management Plan attached.

Purpose-Wise Break- up of the Total land Required:

The 239.9 Ha of land will be required for this power plant at Sahajbahal, Jharsuguda district, out of this 35.985 forest land (27.244 Ha village Forest and 8.741 Ha Revenue Forest), 7.656 Ha. Govt. land, 196.26 Ha. Private Land. Orissa Industrial Infrastructure Development Corporation (IDCO), Government of Orissa shall acquire and transfer the title and possession to the Ind Barath Energy Utkal Limited.

The details of the land required for the Power Project is presented cartographically are attached.

Purpose wise break- up of land usage are shown hereunder:



Pst
Divisional Forest Officer,
Sambalpur North Division

PURPOSE WISE LAND USE PATTERN

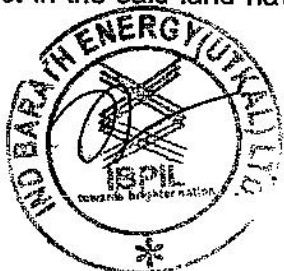
| Sl No | Units/ Operations | Govt. Non Forest Land (Acres) | Private Land (Acres) | Forest Land (Acres) | Total Land (Acres) |
|--------------------------------|---------------------------------------------------|-------------------------------|----------------------|---------------------|--------------------|
| 1 | T. G. Building | 0.00 | 15.53 | 0.00 | 15.53 |
| 2 | Boiler, ESP, Chimney Bottom Ash Slurry Pump House | 0.00 | 8.66 | 8.94 | 17.60 |
| 3 | Switch Yard | 3.91 | 25.57 | 0.00 | 29.48 |
| 4 | Cooling Tower | 4.36 | 16.16 | 4.24 | 24.76 |
| 5 | Crushed coal stock pile | 0.00 | 31.08 | 10.66 | 41.74 |
| 6 | Track Hopper/ Wagon Tripler/ Coal Stock yard | 0.50 | 20.39 | 0.00 | 20.89 |
| 7 | Admn. Building, Store room | 0.00 | 5.80 | 0.00 | 05.80 |
| 8 | Colony area | 0.00 | 28.37 | 0.00 | 28.37 |
| 9 | Ash Disposal/ Ash Dyke | 04.11 | 39.67 | 0.00 | 43.78 |
| 10 | Road | 06.04 | 41.45 | 0.00 | 47.49 |
| 11 | Green Belt | 0.00 | 252.28 | 65.08 | 317.36 |
| Total Area in (Acres) | | 18.92 | 484.96 | 88.92 | 592.80 |
| Total Area in (Hectors) | | 7.656 | 196.26 | 35.985 | 239.9 |

1. Future action plan for Green Belt

It is planned that part of the total area for the project will be covered under an aesthetic, durable and Robust Green belt which will be distributed over an area of 100.00 hectares approximately. The present land- use plan shows open space of 135.91 Ac., part of which will be used for green belt will be made in two types i.e. peripheral green belt ground the boundary of the power plant green coverage inside the plant area. Cost of development of green belt will be developed in Land acquisition and land development cost. Green belt will be developed within three years in a phased manner.

2. Details displacement of people Due to Project, if any.

The proposed project does not require any practical displacement and resettlement thereof. However, there are some house in village Mundapara (a hamlet of Barpali revenue Village) exist in the said land having nine original families and three extended family of their own



[Signature]
 District Forest Officer,
 State Forest Division

and accordingly we have kept provisions for the same under rehabilitation & resettlement (R & R) plan prepared as per the existing R & R plan policy of Govt of Odisha.2006 and amendment there to.

The R & R plan has already been submitted to Revenue Divisional Commissioner for approval of the same. No of families-9 no of SC & ST families-9, submission of R & R plan to the Collector , Jharsuguda is attached.

Whether clearance under environment (Protection) Act, 1986 required

Yes it is required.

As per EIA Notification 14.09.2006 environment clearance is necessary. Therefore, Environment clearance shall be obtained and process has been initiated. Copy of the Environment Clearance of MOEF is enclosed.

Further the company has applied to state pollution control board Orissa, for consent to Establish. Necessary field verification in this regards has been carried out. Copy of the NOC and consent to establish is attached.

The Ind Barath Energy Utkal Ltd. under takes to build an Eco friendly power plant, adopting all national environment standards and cutting edge technology at Sahajbahal village of Jharsuguda District Odisha.

Undertaking to bear the cost of rising and maintenance of compensatory afforestation and/or penal compensatory afforestation as well as cost for protection and regeneration of safety zone etc. And as per the scheme prepared by the state government.

We do here by undertake to bear the Compensatory Aforestation as would be fixed by the state and Central Govt. we also do here by undertake to pay the Net Present Value (NPV) of the proposed forest land to be diverted and any other statutory-payment or costs towards the stipulation fixed by MOEF Govt. of India and Govt. of Odisha of the conservation of Environment, Forest and wildlife, which is directly related to the establishment of this project.



Post
Dy. Forest Officer
Jharsuguda District Odisha

PURPOSE WISE LAND USE PATTERN

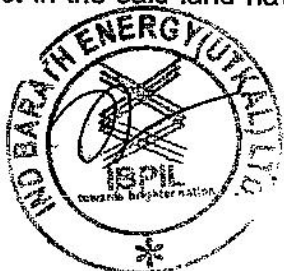
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