DETAIL NOTE ON PROJECT & JUSTIFICATION FOR LOCATING THE PROJECT IN FOREST AREA

The government of India has identified the power sector as a key sector of focus to promote sustained industrial growth. It has embarked on an ambitious mission - "Power for all" backed by extensive reforms to make the power sector more attractive for private sector investment and participation. In this regard "Common Transmission system for Phase II generation projects in Odisha and immediate Evacuation system for OPGC (1320MW) project in Odisha" consisting of establishment of transmission lines i) Jharsuguda (Sundargarh) – Raipur Pool 765KV D/C line in the state of Odisha and Chattisgarh and ii) OPGC – Jharsuguda (Sundargarh) 400KV D/C line with triple snow bird conductor, the Central Government (Power Ministry) has entrusted PFCCL (Power finance corporation), with the task of selecting an Independent Private Transmission Company (IPTC) on 100% Private investment for the above scheme. As per bidding procedure, PFCCL has invited bids for selection of bidders as prospective IPTC for establishment of transmission in which Sterlite Grid 3 Limited participated as bidder.

Subsequently, Power Finance corporation (PFC) through the process of international competitive bidding (ICB) process selected Sterlite Grid 3 Limited as successful bidder for implementation of the above project through its shell company i.e. **Odisha Generation Phase II Transmission Limited** as IPTC on Build, Own ,Operate & Maintain (BOOM) Basis and consequently the Letter of Intent (LOI) was being issued. The primary beneficiary(s) of the above project are North Bihar Power Distribution Company Limited, South Bihar Power Distribution Company Limited, Jharkhand Bijli Vitran Nigam Limited, Damodar Valley Corporation, GRIDCO Limited, Energy & Power Department, Govt. Of Sikkim and West Bengal State Electricity Distribution Company Limited. Ministry of power, Government of India has also accorded approval under section 68(1) of Electricity Act 2003, to implement these lines. The transmission line routes have also been notified in Government of India, Gazette.

Transmission line projects are environmentally friendly and do not involve any disposal of solid effluents and hazardous substances in land, air and water. The constructional features of 765 kV Transmission line is such that it is not affecting the environment as it's not dividing the existing forest because of long spans between the towers (400 Mtrs). Layout of transmission line follows along the forest road / forest block boundary thus involving minimum tree felling and also allowing free movement of birds due to high towers heights 72 – 75 Mtrs. The ground clearance for lower most conductors is 15 Meters. The spacing between the phase conductors is (15 Mtrs) as well. A very small space is required for the construction of tower foundations (25 X 25 Mtrs). The tower foundations are under the ground (3.5 Mtrs) and a small portion of 0.50X0.50 Mtrs are elevated as plinth.

The 765kV D/C Jharsuguda (Sundargarh)-Raipur Transmission Line is starting from 765kV PGCIL Sub-Station located at Kenapali, Sundargarh passing Sundargarh District of Odisha & travel through Raigarh, Janjgir Champa , Bilaspur, Baloda Bazar, Bemetara & Durg districts of Chattisgarh and terminating at 765kV Sub Station of PGCIL at Medesara, Durg. It will create the employment opportunity for local villagers during the construction phase (18 Months) and later on for maintenance of Transmission line, hence affecting the life of village people directly. In indirect as the project is to strengthen the power system in Odisha, hence would encourage industries in the region resulting employment opportunity.

TRANSMISSION LINE DETAILS:-

765kV D/C JHARSUGUDA (SUNDARGARH)-RAIPUR TRANSMISSION LINE

Sr. No.	Item	Details
1	Total Length of 765kV D/C Jharsuguda (Sundargarh) – Raipur Transmission Line	**260.32 Km**
2	District and Forest division details through which line is passing	**4 No Divisions & 4 No. of District in Chattisgarh State .** Durg Forest Division (1.97 Hac) & Bemetara District. Bilaspur Forest Division (4.33 Hac) & Bilaspur District. Janjgir Champa Division (6.282 Hac) & Janjgir Champa District. Raigarh Forest Division (59.179 Hac including approach way of 1 hac) & Raigarh District.
3	Area of the Reserve forest, Protected forest, DLC, Revenue Forest etc. through which line passes.	Durg Division –**1.970 Ha** Bilaspur Division – **4.330 Ha** Janjgir Champa Division – **6.282 Ha** Raigarh Division – **58.179 Ha** Approach Road – **1.000 Ha** Total Forest area proposed for Diversion : **71.761 Hectare**
4	Total No. of Tower to be erected in total and affected tower in Forest.	Total towers: - 648 Nos. Affected Tower in each Division Durg Division –**1 No** Bilaspur Division – **3 No** Janjgir Champa Division – **3 No** Raigarh Division – **26 No** **Total Tower Affected : – 33 No.**
5	Height of Tower	72-75 Mtrs
6	Maximum width of Right of Way for 765kV D/C Transmission Line	67 Meters (For 765kV Double Circuit)
7	Minimum Clearance allowed between conductors of transmission lines and Trees	For 765kV, 9 Meters. (As per the MoEF Guideline dated 5th May 2014)

The Route of the above said transmission line 765 KV D/C Jharsuguda (Sundergarh) – Raipur pool passing through nominal stretches of Revenue, Protected , Reserve & Orange forest area of **71.761** ha . To select the most optimal & feasible route which involves minimal use of forest land that provides the best construction & maintenance facilities, besides being cost effective. A comparison of three alternative routes has been illustrated.

As it can be seen from SOI Toposheet, all the three alternatives routes have been clearly marked out in different colours, routes II & III both have long stretches of common portion with route I.

- As per **Alternative Route- I** (proposed route), involves total length of 260.32 km out of which only 10.710 km forest length involved. Mainly few patches of revenue forest area where minimum trees are there not required for felling, also very less Protected & Reserve forest area were encountered as compared to Route II & III. The route I also have less number of Power line Xing, Railway Xing, No Industrial areas, No densely habitats area. This route is mainly passes through Plain & minimum hilly terrain area. During survey it was found out that this route involves less (ROW) right of way prone areas with respect to construction activities. No old monuments/ archaeological places/temples/ wild life sanctuary and future developments are there. The major advantage of this **Route-I** was that No Mining belt areas was encountered & also no coal block areas near the vicinity are there which was present in route II.

- As far as **Alternative Route -II** was concerned, total line length of 264.45 km out of which 24.680 km forest length cover. This route passes through very dense reserve & protected forests areas. Also it involves continuous patches of revenue forest areas which attributed to increase in forest area. In the alternative route II, near the vicinity of the line was Mining Prone areas mainly in villages Kokdi, Chilhati, Salhegori, Rahtatore in Masturi tehsil district Bilaspur where several companies like ACC, JINDAL, SKS Power have acquired the land for mining purposes.
  Also in Raigarh district acquisition of coal block areas by companies like SECL, NTPC, JSPL etc which can be seen from Toposheet marked as patch wise.

- Similarly in **Alternative Route- III**, total length of line 263.13 km of which 27.810 km of forest area involves. This route mainly passing through several thickly populated areas, densely reserve & protected forest area with significant undulation.

Summarising the factors above in favour of selecting Route I as follows:

- Involvement of Forest stretches in **Route-I** is minimum as compared to Route II & route III.
- Right of way (ROW) and other related problems are much less in **Route-I** as compared to route II & route III.
- Construction as well O &M problems would be much less in **Route-I** as compared to route II & III.
- The major advantage of **Route-I** that no mining prone areas & no coal block acquisition area are there as compared to route II.

Thus, the obvious choice for the most optimum route found to be Route-I , when compared with the other two routes (Route -II & Route- III).

Routes Comparison Statement for all Alternative 3 Routes for Jharsuguda(Sundargarh)-Raipur 765 KV D/C Line				
SL No	***Description***	***Alternate I (Proposed)***	***Alternate-II***	***Alternate-III***
1	BEE Line Length (KM)	243.532	243.532	243.532
2	Route Length (KM)	260.32	264.45	263.13
3	No. of Angle Points	163	204	189
4	Reserved/Protected/Revenue Forest Area(Ha)	10.71	24.68	27.81
5	Density of trees other than forest	Medium	High	High
6	Wild Life Sanctuaries / National Parks	NIL	NIL	NIL
7	Endangered species if any	Nil	NIL	NIL
8	River Crossing (Major)	2 Nos	2 Nos	2 Nos
9	National Highway	4 Nos	6 Nos	6 Nos
10	Railway Crossing	6 nos	6 nos	6 nos
11	Major Power Line Crossings (132 KV and Above)	38 nos	40 nos	43 nos
a	132kv lines	9 nos	11 nos	10 nos
b	220 kV LINE	10 nos	10 nos	10 nos
c	400 KV line	14 nos	16 nos	15 nos
d	765 kv line	5 nos	5 nos	8 nos
12	Places of Archeological Importance	NIL	NIL	NIL

13	Terrain condition	Plain Terrain with undulations and mixed with Hilly terrain	Plain Terrain with undulations and mixed with Hilly terrain	Plain Terrain with undulations and mixed with Hilly terrain
14	Places of historical / cultural / religious / tourist importance	NIL	NIL	NIL
15	Line Pass through any Town/ City	No	NO	NO
16	Line Pass through any Defence establishments	No	NO	No
17	Coal Belt areas	No	Exist	No
	Results & Conclusions			
	Referring to comparative statement for alternative routes and angle point summary, all the three routes are positioned on left side of Bee-line .After initial inspection of physical maps updated with satellite images and walk over survey, all three corridors were explored for the best & optimum route alignment. Special attention has been given to the existing EHV lines, Protected forest, Reserved forest, river crossings, railway crossings ,national highways, minimum route length and habitation . In route-II &III the route traverses through huge mining & Coal block areas, whereas route-I traverses outside corridor of mining & coal block areas. After detailed analysis, Alternate 1 has been observed as most viable route for alignment due to the proximity to the main thoroughfares in the area, construction as well as operation & maintenance problems would be much less in route-1.