

# Goa - Tamnar Transmission Project Limited (GTTPL)

Project Office : HIG - 5, (FIRST Floor), Opp. Durga Pandab,  
Pandit Ravishankar Shukla Nagar, Korba - 495677. Phone No (O): 07759 - 228983

चेक लिस्ट क्र.-10

न्यूनतम वन क्षेत्र उपयोगिता प्रमाण-पत्र


प्रमाण-पत्र


प्रमाणित किया जाता है कि गोवा तमनार ट्रांसमिशन प्रोजेक्ट्स लिमिटेड द्वारा प्रस्तावित 765 के.व्ही डबल सर्किट धरमजसगढ - रायगढ (तमनार) पूल विद्युत पारेषण लाईन के निर्माण परियोजना हेतु वनभूमि की आवश्यकता के परिप्रेक्ष्य में तीन विकल्पों का अध्ययन किया गया जो (संलग्न है)। जिसमें तुलनात्मक न्यूनतम वनभूमि की आवश्यकता पर ही निर्माण कार्य किया जाना प्रस्तावित है।


कृते गोवा तमनार ट्रांसमिशन प्रोजेक्ट्स लिमिटेड

  
निशान्त आचार्य  
उप प्रबंधक (प्रोजेक्ट्स)



  
वन परिक्षेत्र अधिकारी  
छात परिक्षेत्र  
वनमण्डल, धरमजसगढ

  
वनमण्डलाधिकारी  
धरमजसगढ वनमण्डल

  
उपवन मण्डलाधिकारी  
धरमजसगढ, उपवन मण्डल





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

**Name of the Project: - 765 KV D/C Dharmjyagarh – Raigarh (Tamnar) pool Transmission line being constructed by GOA TAMNAR TRANSMISSION PROJECTS LIMITED (GTTPL)**

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” 24x7 backed by extensive reforms to make the power sector more attractive for Private sector investment & participation. In this regard “Additional system for Power Evacuation from Generation Projects Pooled at Raigarh (Tamnar) Pool “consisting of establishment of Transmission lines Dharmjyagarh pool – Raigarh (Tamnar) Pool 765 KV D/C line has been agreed on Empowered Committee of Transmission. The above Transmission System has been Planned for Evacuation of 3000 MW of Power from Jindal Power Ltd (4x600) & T.R.N energy Pvt Ltd (2x300) generating project and onward transfer of same through 765 KV D/C line to Raigarh (Kotra) generating Complex of PGCIL (Power Grid Corporation of India Limited)

The Government of India (Ministry of power) has entrusted PFCCL (Power finance corporation consulting limited) to be the Bid Process Coordinator for selection of bidder as TSP (Transmission Service Provider) for the establishment of above Transmission System. Sterlite Grid 5 was emerged as successful bidder for implementation of the above project through its shell company i.e. **Goa Tamnar Transmission Projects Limited** as IPTC (Independent Power Transmission company) on Build, Own, Operate & Maintain (BOOM) basis and consequently the LOI (Letter of Intent) was being issued. The Primary beneficiary of the Project are Maharashtra state Electricity distribution company ltd, Gujrat Urja Vikas Nigam Ltd, M.P Power Management Co Ltd, Chhattisgarh State Power Distribution Company Ltd. Government of India (Ministry of Power) CEA (Central electricity Authority) of Power system Planning & appraisal division also accorded approval under section 68(I) of Electricity act 2003, to implement these Projects. The Route of the Transmission lines have also been notified in the 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 or water. The construction features of 765 KV Double circuit 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 height of towers 72-75 Mtrs . The ground clearance for lower most conductors is 15 meters. The Spacing between the phase conductors is (15 mts) as well. A very small space is required for the Construction of Tower foundations (25 x 25 mtrs) . The tower foundation is under the ground (3.5 mtrs) and a small portion of 0.50 x 0.50 Mtrs are elevated as plinth.

The 765 KV D/C Dharmjyagarh – Raigarh (Tamnar) Pool is starting from 765/400 KV PGCIL Substation located village Bhaisma, of Korba Tehsil, Korba District & traverse through Dharmjyagarh & Gharghoda Tehsil of raigarh district & terminating at 765/400 KV PGCIL Station Tamnar located in village Bhendra at Gharghoda Tehsil of Raigarh District.





It will create the employment opportunity for local peoples during the construction phase (12 months) and later for maintenance of Transmission line, hence affecting the life of village people directly. In indirectly as this Project planned for Evacuation of about 3000 MW Power from Generating Projects in Raigarh district, hence would encourage industries in the region resulting employment opportunity.

#### TRANSMISSION LINE DETAILS:

#### 765 KV D/C DHARMJYAGARH – RAIGARH(TAMNAR) POOL TRANSMISSION LINE

Sl no	Item	Details
1	Total length of 765 kv D/C Dharmjyagarh – Raigarh ( Tamnar) Pool Transmsission line	69.130 Km
2	District & Forest Division details through which line is passing	3 Nos of Forest Divisions & 2 nos of District in Chhattisgarh State. Korba Forest Division /Korba district Dharmjyagarh Forest Division Raigarh Forest Division /Raigarh District
3	Area of the Reserve forest, Protected forest, Orange forest & Revenue Forest land through which line passes	Korba Div – <b>55.424 Ha</b> Dharmjyagarh Div – <b>58.694 Ha</b> Raigarh Div - <b>22.896 Ha</b> Total Forest area proposed for Diversion - <b>137.014 Ha</b>
4	Total No. of Tower to be erected in total and affected tower in Forest	Total Towers: 182 Nos Affected Tower in each division Korba Div - <b>31 nos</b> Dharmjyagarh Div - <b>20 nos</b> Raigarh Div - <b>14 nos</b> Total Tower affected- <b>65 nos</b>
4	Height of Tower	72 – 75 Mtrs
5	Maximum width of Right of Way for 765 kv D/C Transmission line	67 Meters
6	Minimum Electrical Clearance permissible between Conductors & Trees	For 765 kv , 9.0 mtrs (As per MoEF Guidelines dt 5 <sup>th</sup> May,2014)





During Selection of Route for Construction of 765 KV D/C Dharmjyagarh – Raigarh (Tamnar) Pool Transmission Line utmost emphasis was given to alignment of the Route through Non- forest & revenue Land and where ever it was not possible to avoid the forest land in the route alignment it was fully ensured that the Route passes through Minimum Forest land , by keeping in view of best Construction & maintenance facilities besides being Cost effective.

Initially, Three Alternative routes were explored with respect to Bee-line. The three alternatives routes were clearly marked on SOI (Survey of India) Toposheets by obtaining corresponding GPS Coordinates of all the angle points of three routes. The length of Bee-Line connecting both the Sub-station at Raigarh & Dharmjyagarh is 61.650 Km.

A Detailed exhaustive & comprehensive comparison has been illustrated between all the three routes as mentioned below:

- (i) **Alternate route -I (Proposed Route):** The Alternative route I which was proposed one involves total length of 69.130 km, out of which 20.450 km forest length involves. The route I crosses the Bee-line two times & traverses almost parallel to the Bee-line. As far as possible necessary steps have been taken in selecting the alignment by avoiding most dense forest areas especially Reserve & Protected Forest areas, Coal block /Mining areas, densely habitation areas etc. The route is mainly passing through Plain & minimum undulation hilly terrain area. During survey it was found 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. However very small patches of reserve /protected forest patches coming under this route, but it was unavoidable in view of technical & stability aspect of transmission line. By avoiding dense RF/PF patches line was traverses through many open patches of Revenue/Orange forest area where lesser number of trees felling involves. The major advantage of this Route-I was that No Operational Mining/Coal block areas present near the vicinity of the line which was clearly seen in Route-II.
- (ii) As far as **Alternate Route II** was concerned, the total line length of 70.700 km out of which 24.611 km forest length cover. The route II traverses through exactly on the left side of the Bee-line. It passes through most dense Reserve /Protected Forest areas in Raigarh forest division. As it can be seen from SOI toposheet between AP 13 – AP 15, Open Cast mines area encountered which was operational stage by South eastern coalfields ltd (SECL) and exactly opposite to that largely habitation area of village Chaal & bandhapalli of dharmjyagarh tehsil exist. Between AP 8 & AP 9 left side of the Route, Rabo Dam area exists which is very near to the corridor of line shown in patches in SOI toposheet.
- (iii) As far as **Alternate Route III** was concerned, the total line length of line almost same as route II 70.300 km out of which 34.077 km forest length cover, which is





almost 50% of the line length. The Route III traverses initially parallel to the Route I approximately about 5 km and positioned on the right side of the Bee- line. It crosses the Bee- line once. As it can be seen from SOI toposheet that the route passing through most dense especially Reserve Forest areas with significant undulation namely as Mar pahar RF, Behramar RF, Dorki RF and Protected Forest areas in continuous manner. Also, in advanced stage of the line the Route passes through thickly populated areas.

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

- Involvement of Continuous & dense Forest stretches in Route I is minimum in comparison 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 as O&M problems would be much less in Route I as compared to route II & route III.
- No Operational Mining/Coal block areas exist in Route I as compared to route II.

**Thus, as this was congested corridor between two Sub Stations the obvious choice for the most optimum route found to be Route I, when compared with the other Route II & Route III.**


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**Routes Comparison Statement for all 3 Routes for 765 KV D/C Dharmjaigarh -Raigarh(Tamnar) Pool Transmission Line**

SL No	Description	Alternate I (Proposed)	Alternate-II	Alternate-III
1	BEE Line Length (KM)	61.650	61.650	61.650
2	Route Length (KM)	69.130	70.700	70.300
3	No. of Angle Points	47	48	58
4	Length of line in Forest area(km)	20.450	24.621	34.077
5(i)	Reserved/Protected/Revenue Forest Area(Ha)	137.014	164.961	228.316
5(ii)	Number of Trees enumerated	Trees=41212/Bamboos=20/Pollards=803	Trees=49655/Bamboos=35/Pollards=990	Trees=69760/Pollards=1370
5(iii)	Number of Trees Affected	Trees=12908/Bamboos=3/Pollards=284	Trees=14825/Bamboos=15/Pollards=453	Trees=21875/Pollards=1865
6	Density of trees other than forest	Medium	High	High
7	Wild Life Sanctuaries / National Parks	NIL	NIL	NIL
8	Endangered species if any	Nil	NIL	NIL
9	River Crossing (Major)	1 Nos	1 Nos	1 Nos
10	National Highway	1 Nos	1 Nos	1 Nos
11	Railway Crossing	2 nos	2 nos	2 nos
12	Major Power Line Crossings (132 KV and Above)	8 nos	6 nos	7 nos
a	132kv lines	3 nos	---	3 nos
b	220 kv LINE	2 nos	2 nos	2 nos
c	400 KV line	1 nos	2 nos	1 nos
d	765 kv line	2 nos	2 nos	1 nos
13	Places of Archeological Importance	NIL	NIL	NIL
14	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
15	Places of historical / cultural / religious / tourist importance	NIL	NIL	NIL
16	Line Pass through any Town/ City	No	NO	NO
17	Line Pass through any Defence establishments	No	NO	No
18	Coal Belt areas	No	Exist	No
<b>Results &amp; Conclusions</b>				
<p>Referring to comparative statement for alternative routes and angle point summary, Route 1(Proposed) crosses the Bee-line in three places, Route 2 and Route 3 is positioned in left side &amp; right 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 &amp; 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 the route traverses through operational mining &amp; Coal block areas, whereas route-I traverses outside corridor of mining &amp; coal block areas. In route-III dense Reserve &amp; Protected forest exist. 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 &amp; maintenance problems would be much less in route-1.</p>				

  
 वन परिक्षेत्र अधिकारी  
 छत्तीसगढ़ परिक्षेत्र  
 बलमण्डल, धर्मजयगढ़

