

**DETAILED PROJECT REPORT AND JUSTIFICATION FOR LOCATING THE PROJECT IN
FOREST LAND
(400 kV D/C Xeldem – Mapusa QUAD MOOSE TRANSMISSION LINE)**

PROJECT BACKGROUND

The peak demand met by Goa during the year 2014-15 was 489 MW and as per the 18th EPS, the peak demand of 815 MW was expected by the end of 12th Plan (2016-17) and 1192 MW by the end of 13th plan (2021-22). At present demand of Goa is mainly catered through Mapusa 3x315 MVA, 400/220 kV substation, which gets feed from Kolhapur 400 kV substation through a 400 kV D/c line. Goa system is also connected with Maharashtra and Karnataka through 220 kV lines. To supply the projected power requirement of Goa with reliability, an additional 400 kV in feed to Goa was required. The matter was discussed in the 38th meeting of Standing Committee on Power System Planning in Western Region, held on 17-07-2015 at New Delhi wherein the provision for a new 400kV S/s in Goa at Xeldem along with its interconnections with the Inter State Transmission System was agreed. Accordingly, following transmission system was discussed and approved in the 39th & 40th SCM of WR held on 30.11.2015 & 01.06.2016 respectively and 39th & 40th SCM of SR held on 28-29.12.2015 and 19.11.2016 respectively.

Additional 400kV feed to Goa

LILO of one ckt. of Narendra (existing) – Narendra (New) 400kV D/c quad line at Xeldem.

Xeldem – Mapusa 400kV D/c (quad) line.

Establishment of 2x500MVA, 400/220kV substation at Xeldem

JUSTIFICATION

The construction of 400 kV D/C Xeldem-Mapusa is an additional feed to Goa State to meet arising power deficit through present network system. During survey of this transmission line we came to know that the line passes through several forest patches of North Goa Forest Division. Although this has been ensured that the incurred forest area should be minimum & unavoidable. To confirm the forest area is minimum & unavoidable, we have worked out 3 possible alternate routes from generating to terminating end of this transmission line. Details & comparative statement of all 3 alternate routes are shown as below: -

Comparative Statement of three alternative routes			
Description	Alternate Route 1 (Proposed Route)	Alternate Route 2	Alternate Route 3
Bee Line Length	49.5 Km	49.5 Km	49.5 Km
Line Length	54.960 Km	53.823 Km	59.588 Km
Angle Points	64	65	53
Forest Length	15.089 Km	16.658 Km	21.388 Km
Forest Area (Ha)	69.41 Ha	76.627 Ha	98.385 Ha
Density of Forest Area	Moderate Dense	Moderate Dense	Moderate Dense

This transmission network would strengthen our Grid network in Western Network system. The construction of this line was not an easy task due to hilly terrain, dense vegetation, approachability issue along with other local issues. But as we are committed to empowers humanity by addressing the toughest challenge of energy delivery.

The route alignment survey has been started from Xeldem S/s (Proposed), Sangod, District South Goa. Due to presence of dense forest along with wildlife sanctuary (Bondla wildlife sanctuary) which is a habitat of wild animals & dense vegetation, all possible efforts have been made to avoid this Wild life sanctuary and route is deviated from wildlife area, resulted increase the length of line by approximately 6 kms. In spite of all efforts Eco-sensitive zone of Bondla wild life sanctuary could not be avoided fully.

In view of all above, it is concluded that best possible efforts have been made to minimize involvement of forest land for construction of the project which shall strengthen the transmission network in Western Region.

LEGAL FRAMEWORK

The Prior approval of the Government of India under Section 68 of the Electricity (Supply) Act, 2003 for the subject project has been obtained vide MoP's letter dated 15.06.2017. It is proposed to execute the transmission scheme as provision contained in the Indian Electricity Act, 2003 and the rules made there under and the Electricity (Supply) Act, 1910 and 1948, in so far as these are applicable.

ENVIRONMENTAL RISK

Transmission line Projects are environment friendly and do not involve any disposal of solid effluents and hazardous substance in land, air and water. Moreover, in forest area trees are felled below each conductor to facilitate stringing. On completion of construction only one strip is maintained for O & M purpose. Therefore, the actual loss of forest is restricted to some selected area only. However, as per the requirement of Forest (Conservation) Act, 1980 approval of Ministry of Environment & Forest, Govt. of India for diversion of forest land shall be taken before construction of line in forest area. Further, compensatory afforestation shall be done in double the degraded forest land to compensate the loss of vegetation, due to diversion of forest.

