

**Ref No.- GTTPL/FOREST/NXTL/ 09****Date: 24.03.2026****To, L**

**The Deputy Conservator of Forests  
Dandeli Wildlife Sanctuary,  
Dandeli, Karnataka.**

**Sub:** Essential Details Sought (EDS) on the proposal for diversion of 174.652 ha land for LILO of One Ckt of Narendra (Existing)-Narendra (New) 400kV D/C Quad Transmission Line in Karnataka- *regarding compliance of the observations dated 03.03.2026.*

**Ref:** As given below:

- 1) Letter received from Karnataka Forest department vide No. 4-KRA1526/2025-BAN, dated 11.02.2026.

Dear Sir,

In response to the query raised by Karnataka Forest department on the proposed LILO of One Ckt of Narendra (Existing)-Narendra (New) 400kV D/C Quad Transmission Line (NXTL) route we are submitting pointwise clarifications / compliance as mentioned below:

	<b>EDS Raised</b>	<b>Response</b>
	The State Government has not submitted the recommendation of Project Screening Committee (PSC) as per VSES rules 2023.	Recommendation of PSC may be submitted by Forest Department.
	The DCF/CCF Belgaum has not recommended the proposal, as the forest land falls in Western Ghat with rare and endangered species. DCF has also stated that if the permission is accorded there will be more damage to biodiversity and will bifurcate the entire landscape. In this regard the State Government is requested to submit the comments of CWLW Govt. of Karnataka on the adverse effect of the proposal and also submit the mitigation plan duly approved by the CWLW.	Wildlife Mitigation Plan for Haliyal, Belgaum, Dandeli and Dharwad divisions has been prepared and submitted herewith for further necessary action of the Forest Department.
	The area proposed for diversion of forest land falls inside the protected area, namely Kali Tiger Reserve. Therefore, the State Govt. is requested to submit the recommendation of SC-NBWL clearance.	The proposal for Wildlife Clearance is submitted and recommended by the SBWL and now under consideration by NBWL (Proposal Number-WL/KA/TRANS/448131/2023 Area-32.026 ha)
	The State Government is requested to offer its comments on whether any court cases/ litigations are pending in any court w.r.t this proposal.	No court cases/litigations are pending in any court w.r.t this proposal.
	The DFL land identified for plantation is 16 ha in Varav -Nagalavi in Darwad	The Site Suitability Certificate may be provided by the concerned DCF.

	district, but the Site Suitability Certificate is submitted for 10 ha only. The State Government is requested to submit the revised Site Suitability Certificate.	
	As per satellite imagery, it appears that the plantation activities has already been carried out in the CA land (DFL) identified in Belgaum to an extent of 50 ha in Sy. No. 270(57) in Gunjal, Gokak. In this regard the State Government is requested to clarify that plantation activities have already been carried out in the said identified land in any other Scheme earlier.	The DCF, Belgaum may submit the fact.
	As per satellite imagery, agricultural fields are visible in the CA land (DFL) identified in Belgaum to an extent of 100 HA in Sy. No. 13 &136 in Chandur/Tummaraguddi. In this regard the State Government is requested to clarify whether the identified CA land is under encroachment.	The DCF, Belgaum may submit the fact.
	As per the DSS analysis, out of the nine patches of DFL land identified across three districts for the purpose of Compensatory Afforestation (CA), seven patches are found to have thick vegetation density (details as per below table). In this regard, the State Government is requested to re-verify the canopy density of the identified DFL land and ensure that the land proposed for CA has a canopy density of less than 0.4. In case any of the identified DFL land is found to have a canopy density exceeding 0.4, it is requested that alternative DFL land with the prescribed canopy density shall be identified for the purpose of CA.	The State Forest Department may kindly take necessary action.

Thank you.

Yours Sincerely,  
For Goa Tamnar Transmission Project Limited

*Nitin Agrawal*  


(Nitin Agrawal)







# WILDLIFE MITIGATION PLAN

Prepared For

LILO of One Ckt of Narendra (Existing)-Narendra  
(New) 400kV D/C Quad Transmission Line

By

Goa-Tamnar Transmission  
Project Limited (GTTPL)

## Chapter 1: Introduction

### 1.1 Project Background:

Goa Tamnar Transmission Projects Limited (GTTPL) is developing the project, “**Additional 400 kV feed to Goa and Additional System for Power Evacuation from Generation Projects pooled at Raigarh (Tamnar) Pool**” which is awarded to them through tariff based competitive bidding process. PFC Consulting Limited, a wholly owned subsidiary of Power Finance Corporation Limited, has been authorized by the Ministry of Power, Government of India, to implement the transmission projects in the states of Goa, Karnataka, and Chhattisgarh for providing an additional 400 kV feed to the State of Goa. The Transmission Scheme comprises of the following elements are given below:

**Table 1.1: Transmission line project components**

S.No.	Name of Project Element
<b>A</b>	<b>Additional 400 kV Feed to Goa</b>
i	LILO of one ckt of Narendra (Existing)- Narendra (New) 400 kV D/C quad line at Xeldem.
ii	Xeldem-Mapusa 400 kV D/C (Quad Line)
iii	Establishment of 2X500 MVA, 400/220 kV substation at Xeldem along with its 220 Kv interconnection with existing system.
<b>B</b>	<b>Additional System for power evacuation from generation projects pooled at Raigarh (Tamnar) pool.</b>
i	Dharamjaygarh pool section B- Raigarh (Tamnar) pool 765 kV D/C Line.

For the execution, ownership, and operation of the project, a Special Purpose Vehicle (SPV), namely **Goa-Tamnar Transmission Project Limited**, has been incorporated. The SPV shall be responsible for the complete development, ownership, operation, and maintenance of the transmission system.

### 1.2 Justification and Benefit of the Project:

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 400 kV Transmission line are 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 approx.). Layout of transmission line follows along the forest road / forest block boundary thus involving minimum tree felling and allowing free movement of birds due to high towers heights ~ 45 – 50 Mtrs. The minimum ground clearance for lower most conductors

is more than 9 Meters in any case and spacing between the phase conductors is ~ 5.5 Mtrs as well. A very small space is required for the construction of tower foundations (20 X 20 Mtrs). The tower foundations are under the ground (3.5 Mtrs) and a small portion of 0.50X0.50 Mtrs are elevated as plinth.

**“As per Hon’ble Supreme Court order dated 07th April 2022 on CEC report no 6 of 2021 that the project proposal in respect of Karnataka part should also be suitably amended so as to make use of 110/220 kV line corridor which will ensure that the commitment given by Power Grid and CEA to the Karnataka Government that no further transmission line shall be laid in the area is not violated. The modification that has been proposed by the CEC would be in the interest of forest and wildlife in the ecologically fragile and biodiversity in these parts. Finally, CEC recommended that direction should be given to the Ministry of Power, Government of India, Goa State Electricity Department and GTTPL to redraw and modify the alignment of additional 400 kV line corridor between Narendra (existing) – Sangod (new) in the State of Goa and Karnataka”.**

Taking the above into consideration, GTTPL has made necessary modifications in the Forest & Wildlife proposals and submitted to the concerned forest authorities on 20.07.2022 for further processing. While scrutinizing the modified proposals, DFO Dandeli raised a query and asked to utilize the existing corridor of 110/220 kV line in its entirety within Dandeli Wildlife Sanctuary.

Query raised by the DFO, Dandeli vide EDS dated 05.09.2022 is reiterated below:

*“Since the Central Empowered Committee has made the recommendation in its report No. 6 of 2021 that “the project proposal in respect of Karnataka part will require to be suitably amended so as to make use of existing 110/220 kV line corridor”, it is hereby requested to update the proposal submitted to follow the 110/220 kV alignment in its entirety within Dandeli Wildlife Sanctuary as per the direction of Hon’ble Supreme Court in its order dated 7th April 2021”.*

In response to the above query, suitable justification for finalizing the proposed alignment as per CEC recommendation was submitted to the DFO Dandeli on 10.10.2022. Karnataka forest department then asked to seek clarification from the Hon’ble CEC on its recommendation for modification in the route w.r.t. Karnataka. Accordingly, Hon’ble CEC was approached through the Karnataka State Government for required clarification.

Hon’ble CEC in the meeting held on 13.04.2023 clarified that “CEC has not examined any of these proposed alignments in the State of Karnataka. In fact, examination by the CEC was limited to the State of Goa only”. Hon’ble CEC further clarified that, “a decision as to the most appropriate alignment for the proposed 400 kV transmission line in Karnataka will require to be taken by the State Govt. of Karnataka after considering the technical

feasibility of drawing 400 kV line upto Narendra, the extent of forests involved and the number of trees to be cut in each of the three alignments and the impact of each of these options on the wildlife and ecology of the area”.

The best possible route was finalized and submitted to DCF Dandeli for review and concurrence. DCF Dandeli gave final concurrence on the route on 26.05.2023 and asked to submit the revised proposal. Area statement of proposed route is given below:

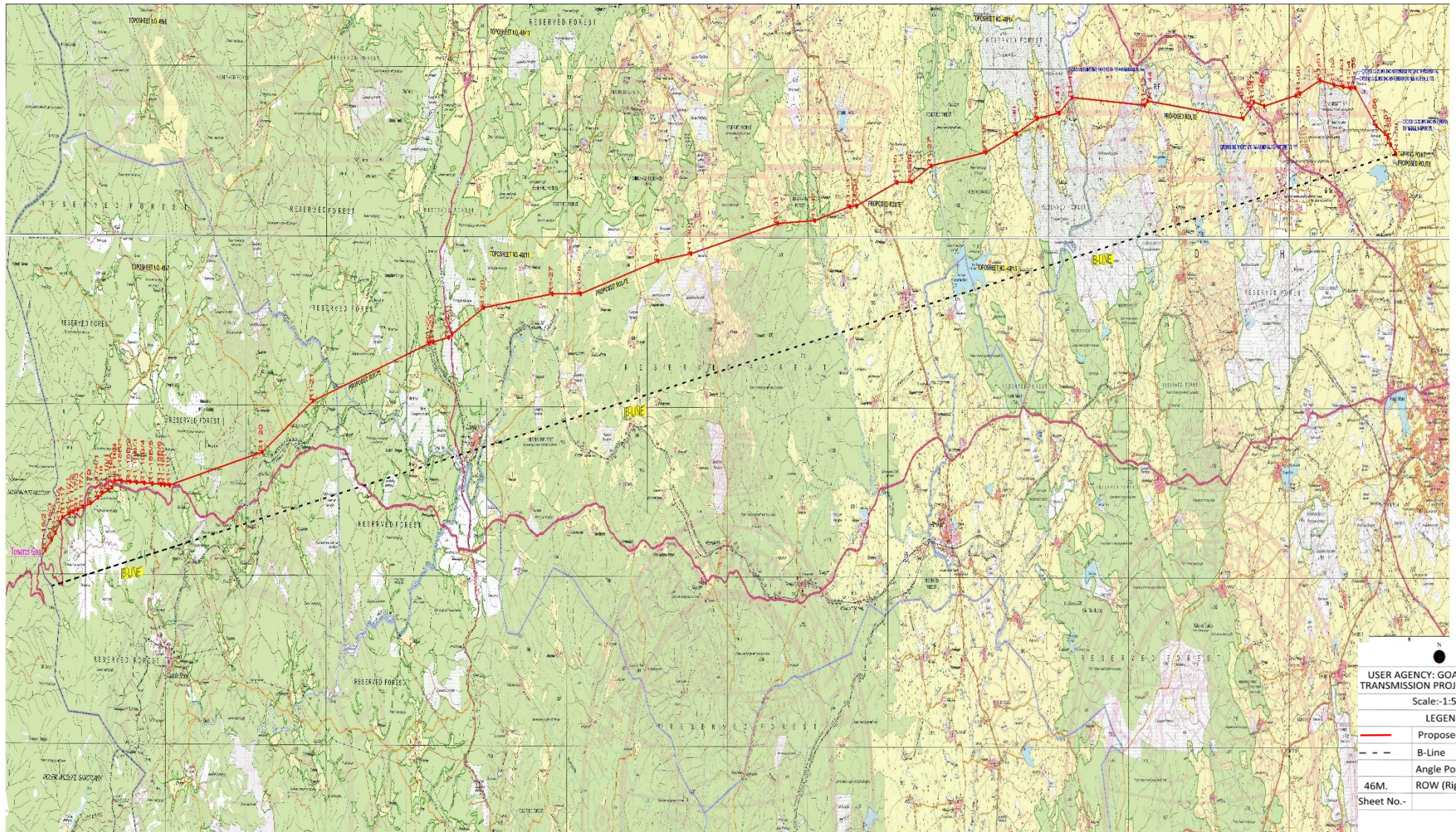
**Table 1.2: Area statement of Proposed route**

<b>Description</b>	<b>Alternate Route 1 (As per suggested by Forest Dept. Karnataka)</b>
<b>Bee Line Length</b>	76.212 Km
<b>Line Length</b>	85.724 Km
<b>Forest Length</b>	31.006 Km
<b>Wildlife Length</b>	6.962 Km
<b>Total Forest &amp; WL Length</b>	37.968 Km
<b>Forest Area (ha)</b>	142.626 Ha
<b>Wildlife &amp; NP Area</b>	32.026 Ha
<b>Total Forest &amp; WL Area</b>	174.652 Ha
<b>Density of Forest Area</b>	Moderate Dense

### **1.3 Details of the Proposed Transmission Project**

Transmission Line projects are environment friendly and do not involve any disposal of solid effluents and hazardous substances in land, air and water. Moreover, in forest area trees are felled only below each conductor to facilitate stringing. On completion of construction, only one strip is maintained for O & M purpose. Therefore, the loss of forest is restricted to some selected areas 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. Compensatory Afforestation shall be done in double the degraded forest land to compensate the loss of vegetation, due to diversion of forest.

# 1.0 : Location Map



## Chapter 2: Description of the protected area & likely impact of project Major Habitat, Flora and Fauna

### a) Vegetation Types:

The vegetation of the study area is a mosaic of tropical semi-evergreen and tropical moist deciduous forests.

- **Tropical semi-evergreen forests (West tropical semi-evergreen forests):**

This type of forest is intermediate between tropical Evergreen and Moist deciduous types as it has a mixture of both the evergreen and deciduous trees. Some part of area belongs to this category. In this type also a three-layer stratification of the trees are met which is shown below in the table.

**Table 2.1 List of species found in Upper, Middle and Lower status**

Upper Stratum (Canopy Layer)	Middle Storey (Sub-canopy Layer)	Lower Stratum (Understorey Layer)
<i>Aglaia elaeagnoidea</i>	<i>Acronychia pedunculata</i>	<i>Agrostistachys indica</i>
<i>Aphanamixis polystachya</i>	<i>Actinodaphne tadulingami</i>	<i>Antidesma menasu</i>
<i>Artabotrys zeylanicus</i>	<i>Aglaia lawii</i>	<i>Aporosa lindleyana</i>
<i>Artocarpus gomezianus</i> subsp.	<i>Atalantia racemosa</i>	<i>Butea monosperma</i>
<i>Bischofia javanica</i>	<i>Bridelia retusa</i>	<i>Buchanania cochinchinensis</i>
<i>Toona ciliata</i>	<i>Diospyros montana</i>	<i>Callicarpa tomentosa</i>
<i>Bombax ceiba</i>	<i>Diospyros paniculata</i>	<i>Chionanthus malabarica</i>
<i>Bombax insigne</i>	<i>Drypetes venusta</i>	<i>Cinnamomum verum</i>
<i>Carallia brachiata</i>	<i>Ehretia indica</i>	<i>Clausena anisata</i>
<i>Celtis timorensis</i>	<i>Ficus callosa</i>	<i>Firmiana colorata</i>
<i>Chukrasia tabularis</i>	<i>Flacourtia montana</i>	<i>Ixora brachiata</i>
<i>Dillenia pentagyna</i>	<i>Grewia serrulata</i>	<i>Lanea coromandelica</i>
<i>Diospyros buxifolia</i>	<i>Grewia tiliifolia</i>	<i>Maesa indica</i>
<i>Diospyros candolleana</i>	<i>Harpullia arborea</i>	<i>Mallotus philippensis</i>
<i>Diospyros crumenata</i>	<i>Heterophragma quadriloculare</i>	<i>Pittosporum dasycaulon</i>
<i>Diospyros oocarpa</i>	<i>Holoptelea integrifolia</i>	<i>Sapindus laurifolius</i>
<i>Dimocarpus longan</i>	<i>Hydnocarpus pentandra</i>	<i>Saraca asoca</i>
<i>Flacourtia montana</i>	<i>Lepisanthes tetraphylla</i>	<i>Terminalia chebula</i>
<i>Grewia umbellifera</i>	<i>Mallotus ferrugineus</i>	<i>Tabernaemontana alternifolia</i>
<i>Holigarna arnottiana</i>	<i>Margaritaria indica</i>	
<i>Holigarna grahamii</i>	<i>Nothopegia castaneaefolia</i>	
<i>Hopea ponga</i>	<i>Olea dioica</i>	
<i>Hydnocarpus pentandra</i>	<i>Oroxylum indicum</i>	

- **Tropical moist deciduous forests (Southern moist mixed deciduous forests and secondary moist mixed deciduous forests)**

This type of forest has a mixed composition with a few evergreen trees as well. During the wet season, because of thick foliage, the canopy looks similar to that of semi-evergreen forests and is therefore scarcely distinguishable. However, during the dry season the moist deciduous forests reveal their identity as the trees shed leaves. The leafless period varies from few weeks to five months depending on the species. Among the trees, *Bombax ceiba*, *Bombax insigne*, *Hymenodictyon obovatum* and *Lagerstroemia microcarpa* have leafless period up to five months. *Terminalia paniculata* have a leafless period of less than two weeks. The South Indian moist deciduous forests particularly those bearing Teak are variously classified as moist, very moist and slightly moist teak forests. The other two types are the southern moist mixed deciduous forests and secondary moist mixed deciduous forests. The last two types are considered together here, as there is little difference in the floristic composition between the two. The main difference is the degree of degradation. Stratification of the trees are shown below in the table.

**Table 2.2 List of species found in Upper, Middle and Lower status**

<b>Upper Stratum (Canopy Layer)</b>	<b>Middle Stratum (Sub-canopy Layer)</b>
<i>Albizia amara</i>	<i>Bauhinia malabarica</i>
<i>Albizia lebbek</i>	<i>Bauhinia racemosa</i>
<i>Albizia odoratissima</i>	<i>Cassia fistula</i>
<i>Anogeissus latifolia</i>	<i>Careya arborea</i>
<i>Bambusa bambos</i>	<i>Erinocarpus nimmonii</i>
<i>Bauhinia foveolata</i>	<i>Ficus ampelos</i>
<i>Bombax ceiba</i>	<i>Garuga pinnata</i>
<i>Bombax insigne</i>	<i>Macaranga peltata</i>
<i>Callicarpa tomentosa</i>	<i>Madhuca longifolia var. latifolia</i>
<i>Careya arborea</i>	<i>Milium tomentosa</i>
<i>Cassia fistula</i>	<i>Olea dioica</i>
<i>Chukrasia tabularis</i>	<i>Phyllanthus emblica</i>
<i>Dalbergia latifolia</i>	<i>Sapindus laurifolius</i>
<i>Dillenia pentagyna</i>	<i>Spondias pinnata</i>
<i>Gmelina arborea</i>	<i>Sterculia guttata</i>
<i>Grewia tiliifolia</i>	<i>Streblus asper</i>
<i>Haldina cordifolia</i>	<i>Strychnos nux-vomica</i>
<i>Hymenodictyon orixense</i>	<i>Trema orientalis</i>
<i>Kydia calycina</i>	<i>Trewia nudiflora</i>
<i>Lagerstroemia microcarpa</i>	<i>Wrightia arborea</i>

<i>Lannea coromandelica</i>	<i>Zanthoxylum rhetsa</i>
<i>Melia dubia</i>	
<i>Miliusa tomentosa</i>	
<i>Pterocarpus marsupium</i>	
<i>Radermachera xylocarpa</i>	
<i>Spondias pinnata</i>	
<i>Tectona grandis</i>	
<i>Terminalia bellirica</i>	
<i>Terminalia elliptica</i>	
<i>Terminalia. paniculata</i>	
<i>Tetrameles nudiflora</i>	

**b) Wild Fauna and Habitats:**

Common fauna found in the project area are tiger, leopard, Small Indian Civet, Wild Boar, squirrel, Sambar, Spotted Deer, Mouse Deer, Gaurs, Grey Jungle fowl, Indian Peafowl, Bar Headed Geese, Rufous Woodpecker, White Bellied Woodpecker, Brown Capped Pygmy Woodpecker, Yellow Crowned Woodpecker, Heart Spotted Woodpecker, Black Rumped Flameback, Greater Falmeback, Brown-Headed Barbet, White Cheeked Barbet, Coppersmith Barbet, Malabar Grey Hornbill. Most of the amphibians and reptiles are generalist and occur in various habitats and a few are habitat specific. There are burrowing, terrestrial, aquatic and arboreal species of amphibians and reptiles. The burrowing species mostly occupy habitats with good canopy cover and thus confined to the forests. Although, there are a few exceptions. Most of the burrowing herpetofauna is also active during monsoon season. The terrestrial species are mostly confined to forest floor and are seen among leaf litter, under logs or rocks. Aquatic species are mostly seen close to streams, pools and rivers and solely depend on these water sources for majority of their activities. Due to this specific requirement, they are mostly encountered during monsoon season. Many aquatic amphibians utilize stagnant pools, and a few are only seen in the forest streams.

The habitat in the study area in Karnataka is mostly homogenous and composed of tropical semi evergreen forest and tropical moist deciduous forest. Although this habitat has similar altitudinal gradient, the terrain is significantly undulating. The habitat is mostly pristine with a few places with Eucalyptus plantations, which appear to be open and exposed. Rest of the natural habitat has an understory plantation with thick layer of decaying leaf litter and rotting logs of dead trees.

## 2.1 Major Activities Involved in the Laying of Transmission Line Project

The major construction activity envisages in the proposed transmission project are as follows: -

- Construction of Tower Foundation
- Erection of transmission towers
- Stringing of electrical conductor wires between adjacent towers

### 2.1.1 Construction of Tower Foundation -

Foundations are excavated manually or with mechanized tools, and concrete is hand-mixed on site. Standard practice uses four individual footings per tower leg, set out and pegged before excavation. Formation levels are checked by the engineer. A prop holds the tower stubs while concrete is poured and cured. The remaining foundation, including the shear block or neck, is shuttered and filled with concrete. Foundations are backfilled and compacted in layers, typically using the excavated material.

Foundation size- The average foundation size for each tower leg used on the 400kV transmission system is 5.3m x 5.3m x 3.5m for single circuit tower, 5.1m x 5.1m x 3.5m for double circuit angle.

**Figure 2.1: Photograph setting template being prepared for final concreting**



### 2.1.2 Erection of transmission towers -

The most common and effective method of constructing a transmission line of this nature is a “derrick pole”. The methodologies are outlined below.

#### **Derrick Pole Method:**

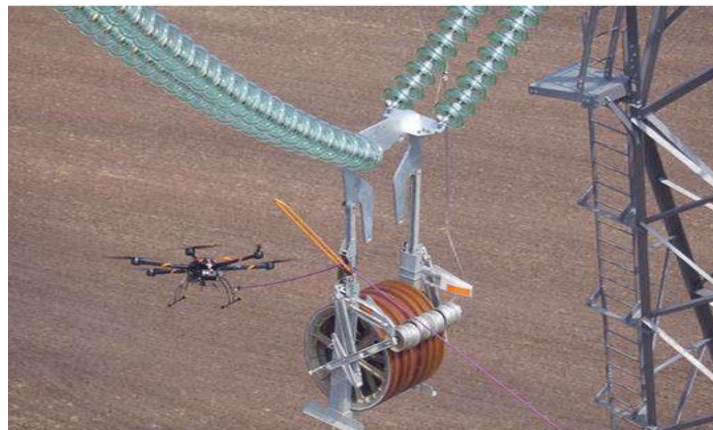
Towers are built using a derrick (gin pole) and tractor, lifting small steel sections with a winch. The steel pole is stabilized by guy ropes anchored to the ground. This simple method is efficient, safe, and widely used for transmission lines.



**Fig 2.2: Model visual: Derrick pole at the tower base**

### **2.1.3 Stringing of electrical conductor wires between adjacent towers -**

Conductor stringing is done mechanically with a power winch, using a pilot wire or steel rope and carried out aurally, sometimes with Unmanned Aerial Vehicles (UAVs) for safety. Once in position, one end is secured to tension fittings and insulators, the other held in temporary “come along” clamps. The conductor is then cut from the puller and sagged using a chain hoist.



**Fig 2.3: Conductor Stringing**

- The said project covering a wildlife area of 32.026 ha in Dandeli Wildlife division which was discussed in State Board of Wildlife meeting (SBWL) under the Chairmanship of Hon’ble Minister Environment, Forest & Climate Change, Govt. of Karnataka dated 02.01.2026 and the committee has recommended the proposal. SBWL committee has sent the proposal to the Central Govt. to seek recommendation of SC-NBWL. SC-NBWL has seen the proposal and raised a query on 12.02.2026 to submit the management plan prescribing species to be planted below the transmission line. The user agency has prepared the Management plan amounting Rs. 2.5 Cr for the area below the transmission line and submitted to DCF, Dandeli on 23.02.2026 for furtherance.

## **Chapter 3: - Proposed Mitigation Measure**

### **3.1 Construction Phase Mitigation Measures –**

Mitigation measures suggested in the construction phase are discussed below:

- Habitat disturbances to be kept at minimum by using existing trails for transportation of man, material and machinery
- Any vegetation clearance required should be limited to the minimum area required for such passages.
- Construction activity, man and material movement should be limited to the daytime and early morning, late evening and night activity should be completely avoided to allow the unrestricted wildlife movement.
- No night stay at the construction site should be planned, proper planning of day work (within the daylight hours) should be done.
- We ensure that our employed workforce will not be involved in hunting, trapping and poaching.
- Proper housekeeping of the construction areas should be followed during and after construction phase is completed.
- Man movement will be on foot, damage to flora and fauna should be avoided to maximum extent.

### **3.2 Mitigation for Operational Phase –**

Mitigation measures suggested in the operation phase are discussed below:

- Any routine and corrective maintenance schedule planned should be undertaken only after pre informing the forest department.
- Pre nest search before commencing any pruning and lopping to be undertaken.
- Suggesting artificial nest boxes along the transmission line route to mitigate the loss of nesting sites along the transmission line route.
- Installation of bird diverters on the conductor and perch rejecters on transmission tower along the transmission line corridor should be undertaken along the wildlife stretch.
- In addition to the above, artificial nesting platform for raptor species to be built along the transmission line at 200 m.
- Structures to climb transmission towers should have a restriction guards (to avoid access to for arboreal species (Maccaques, Langurs, Loris, Giant Squirrels etc.).
- Rapid carcass search along the transmission line corridor for possible victims of collision and electrocution should be undertaken once in 6 months.

**Fig 3.1: Mitigation Structures for Transmission Line**



### **3.3 Safeguard of wildlife passage -**

For safe passage of wild animals and other mammals in forest area following mitigation measures are proposed. As per Indian Electricity rule, the minimum ground clearance for 400 kV Transmission line is 9 meters approx. i.e. the lower most electrical conductor wire between two adjacent towers will be stringed in such a way that the minimum height from actual ground level is always more than 9 meter which is sufficient for safe passage of animals and other mammals.

### **3.4 Safeguard of birds from electrocution and accidental collision –**

The following mitigation measures are proposed for safeguard of birds-  
The Stringing of conductor for the transmission line shall be carried out maintaining a separation between energized conductors as follows:

- Vertical distance between two conductors: ~8 Meters

The above arrangement will nullify the likelihood of electrocution of large winged birds, because the distance between energized conductors will be always more than the maximum wingspan of the bird. To prevent accidental collision of birds with the conductor bird diverter/coloured/contrast marker devices will be installed on the earth wire to make it visible to birds from long distance as shown below-

- Bird Guard will be provided on towers as per requirement to prevent birds from sitting in the insulator strings which may result in puncture of insulator due to defecation by birds.

**Fig 3.2: Bird Diverter/Coloured/Contrast Marker Devices**



### **3.5 Safeguard of accidental fallings of animals in excavated pits for tower –**

The excavated pits shall be properly barricaded and fenced to prevent accidental falling of mammals in the vicinity of the construction sites.

### **3.7 General mitigation measures for protection of wildlife-**

In addition to the above specific measures for animals and birds, the following mitigation measures will be adopted by GOA TAMNAR TRANSMISSION PROJECT LIMITED during execution of the project for protection of wildlife.

- Before start of work in forest area an awareness campaign will be taken up by GOA TAMNAR TRANSMISSION PROJECT LIMITED in association with Forest Dept. to create maximum awareness among the construction workers regarding safeguard of forest and wildlife.

- Tree felling will be minimized along the line corridor and only those trees which are unavoidable for tower foundation & erection will be felled under the supervision of Forest department.
- The trees on the remaining part of the transmission line corridor will be mostly lopped and pruned which are required for stringing of conductor. In case of towers falling in hilltop locations where enough ground clearance is available, tree will not be felled. This will minimize the impact on nesting sites of birds as well as habitat of arboreal species.
- The specific and important tree species as identified by the Forest department will be marked separately and protected during the construction of the transmission line.
- To minimize the disturbance to wildlife, no new approach road will be constructed in the forest area. The existing village tracts/paths will be utilized for carrying of tower materials and manual excavation of tower foundation will be done.
- Eco-friendly engineering practices in the construction works and due care be taken properly so as to avoid injury to wildlife.

### **3.8 Protection and Management of Flora & Fauna-**

The protection of fauna in this area can be done by strict implementation of the Wildlife Protection Act, 1972 and Indian Forest Act, 1927. The water sources such as ponds and nallas which constitute an important habitat of wild animals and birds should be continuously supervised. The awareness program regarding protection of endangered fauna should also be taken up in the vulnerable areas. Protection of fauna is generally as per the standard operation procedures specified by the government.

### **3.9 Measures for forest conservation and mitigate man animal conflict:**

The proposed mitigation measures focus on enhancing the preparedness and response capabilities of forest department personnel to effectively manage human-wildlife conflicts. The key components of the mitigation plan include:

1. **Training and Capacity Building:** Forest department staff, including frontline workers and field officers, will receive specialized training in wildlife management, conflict resolution techniques, and emergency response protocols. Capacity building initiatives will ensure that personnel are well prepared to address evolving challenges in human-wildlife interactions.
2. **Community Outreach and Awareness:** Engaging local communities through awareness campaigns and educational initiatives will be crucial in fostering

coexistence between humans and wildlife. By promoting understanding and respect for wildlife, communities can play an active role in mitigating conflicts and conserving natural habitats.

### 3.10 Objectives of the Mitigation Plan-

The primary objective of this wildlife mitigation plan is to establish an effective mechanism for managing disturbances in wildlife habitats and mitigating human-wildlife conflicts. To achieve this goal, the following key objective has been identified:

- **Financial Outlay and Equipment Requirements:** The financial allocations and equipment specifications outlined in this plan adhere to the latest guidelines established by the Karnataka State Government for addressing wildlife-related issues. A detailed breakdown of the financial requirements and equipment needs for each subdivision is provided in the subsequent section.

### 3.11 Financial Outlay for Wildlife Mitigation Plan:

An Indicative Cost Estimation for Wildlife Mitigation Plan amounts to Rs. 2.902 Cr (detailed breakup is tabulated below) in Dharwad, Belgaum, Haliyal Forest Division and Dandeli Wildlife Division. Cost estimation for Wildlife Management Plan is shown in Table 3.1.

**Table 3.1: Cost estimation for Wildlife Management Plan**

<b>Sr. No</b>	<b>Description</b>	<b>Amount</b>
1	Project Cost	327.46 Cr
2	Line Length	85.724 Km
3	Line Length in Forest	37.968 Km
4	Proportionate Project Cost	145.104 Cr
5	WLMP Cost for Dandeli Wildlife Division (2%)	0.532 Cr
6	WLMP Cost for Dharwad Division (2%)	0.129 Cr
7	WLMP Cost for Belgaum Division (2%)	1.164 Cr
8	WLMP Cost for Haliyal Division (2%)	1.077 Cr
Total Cost for WLMP (Sr. no. 5,6 ,7 & 8)		2.902 Cr

## WILDLIFE MITIGATION PLAN

Sr. No.	Name of Equipment or Material	Dandeli Division	Belgaum Division	Haliyal Division	Dharwad Division	Total Cost
1	Fire line watcher	<b>0.532 Cr</b>	<b>1.164 Cr</b>	<b>1.077 Cr</b>	<b>0.129 Cr</b>	<b>2.902 Cr</b>
2	Fire line clearance					
3	Body Armour					
4	Watch Towers					
5	Head Torch					
6	Wildlife rescuers Kits Items					
7	Habitat improvement & mitigation measures in forest area & measures to reduce human-animal conflict					
8	Maintenance of existing natural water holes					
9	Public awareness, training and miscellaneous works/activities to reduce man-animal conflicts					
10	Pasture development by removal of invasive alien species hindering growth and regeneration of valuable species for wildlife in impact zone of all the forest.					
11	Nest & Artificial nest distribution and fruit plant development for Avifauna diversity improvement					
12	Escalation cost & unforeseen expenditure					

### **3.12 Conclusion**

Considering the importance of conservation of wildlife habitat and their corridor, it is found that there will be some temporary and permanent impact from the aforesaid transmission project on the area. However, the User Agency, GOA TAMNAR TRANSMISSION PROJECT LIMITED has taken a holistic approach towards protection of the area through the principle of avoidance, minimization and mitigation in their project activity and committed for implementation of various mitigation measures in this regard.