

# Animal Passage Plan

## For

### 400kV D/C Jaunpur Obra Transmission Line passing through Protected area of Kaimur Wildlife Sanctuary.

---

#### I. INTRODUCTION OF PROJECT

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 Uttar Pradesh Power Transmission Corporation Ltd. (UPPTCL) identified development of transmission system for "Evacuation of power from Obra-C (2x660 MW) Thermal Power Project & Construction of 400 kV GIS Substation Badaun with associated Transmission Lines" consisting of establishment of 400 kV Double Circuit Jaunpur - Obra line (upto LILO point of Obra 'B' – Obra 'C' Line).

The Uttar Pradesh Government (Power Ministry) has entrusted PFC consulting Limited, with the task of selecting an Independent Private Transmission Company (IPTC) on 100% Private investment for the above scheme vide its letter no. 278/PS/DIR(W&P)/PTCL/Obra'C' dated June 01, 2018. As per bidding procedure, PFC has invited bids for selection of bidders as prospective IPTC for establishment of transmission in which M/s Adani Transmission Limited participated as a bidder. Subsequently, PFC consulting limited through the process of international competitive bidding (ICB) process selected M/s Adani Transmission Limited as successful bidder for implementation of the above project through its shell company i.e. Obra C Badaun Transmission Limited as IPTC on Build, Own and Operate (BOO) Basis and consequently the Letter of Intent (LOI) was being issued (Letter No. 04-05/ITP29/18-19/OCBTL/LOI dated 29th Nov, 2018. Principal Secretary, Power Department, Uttar Pradesh has also accorded approval under section 68(1) of Electricity Act 2003, to implement these lines (Letter No 2794/24-1-2018-2422/2008 dated 2nd November 2018).

The development of 400kV D/C Jaunpur Obra Transmission Line starting from LILO point of Obra-B Obra-C line in Chopan of Sonbhadra District and terminating at 400/220/132kV Substation of UPPTCL in Machlisahar of Jaunpur District, having line length approximately 166Km and is passing through 5 districts which are Jaunpur, Bhadhoi, Varanasi, Mirzapur and Sonbhadra. The Line is passing through forest patches (89.632Ha for which forest approval has been granted) and Protected area of Kaimur Wildlife Sanctuary. The technical details of the proposed is stated as below:

|                                                    |                                                                               |
|----------------------------------------------------|-------------------------------------------------------------------------------|
| Name of project for which WL clearance is required | 400kV D/C Jaunpur Obra Transmission Line (Proposal No FP/UP/TRANS/40906/2019) |
| Total Project area                                 | 763.182 Ha (165.908 Km)                                                       |
| Details of wildlife area involved                  | Protected area of Kaimur Wildlife Sanctuary                                   |
| Total no of towers to be erected in WL area        | 29 Nos.                                                                       |
| Total wildlife area involved                       | 55.447 Ha (39.482Ha Forest and 15.965 Ha Non Forest)                          |



## II. MAJOR ACTIVITIES INVOLVED IN THE TRANSMISSION PROJECT

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

- Construction of Tower Foundation (An average of 15 M x 15 M tower base and activities involves excavation of soil and concreting)
- Erection of transmission towers (involves joining of tower members/lattice structure)
- Stringing of electrical conductor wires between adjacent towers.

The above activities will be carried out by engaging suitable Contractor. For tower foundation works, local gangs/manpower are usually engaged as petty Contractor and temporary makeshift camps are set nearby the construction site till completion of work. For hill areas construction of new approach road generally not encouraged & the existing village tract or jungle tract are used for head loading of tower materials. Tower erection and stringing of conductor is generally carried out by specialized gangs and temporary construction camps are also required to be set up for this purpose.

### A. Tower Foundation

Foundation of a transmission tower is the basic structure to support the tower in its position. It plays an important role in safety and satisfactory performance of the structure as it transmits mechanical loads of the electrical transmission system to earth. The foundations in various types of soils have to be designed to suit the soil conditions of particular type. In addition to foundations of normal towers, there are situations where considering techno-economical aspect for special towers required or river crossing which is located on the bank of the river. The various activities involved in the foundation work excavation, casting of Raft and chimney which are done below ground level.

### B. Tower Erection:

Build Up Method is used for erection of steel transmission towers. This method is most commonly used in India for the erection of 66kV, 220 kV and 400 kV transmission line towers. This method consists of erecting the towers, member by member. The tower members are kept ground serially according to erection sequence to avoid search or time loss. The erection progresses from the bottom upwards. The four main corner leg members of the first section of the tower are first erected and bolted with the stub.

### C. Tower Stringing:

Stringing of Transmission line, a process of joining and fixing of the electrical conductor wires from tower to tower and various other assemblies for transmission of electricity. Stringing overhead conductors in transmission is a very specialized type of construction requiring years of experience as well as equipment and tools that have been designed, tried and proven to do the work.

#### Steps of stringing

- Proper guying
- Insulator Hoisting
- Paying out of pilot wire & conductor
- Rough sagging of conductor
- Clipping & spacing
- Finishing activities
- Jumpering
- Final checking



### III. LIKELY IMPACT OF THE PROJECT ON PROTECTED AREA OF KAIMUR WLS:-

The impact on the forest and wildlife associated with power transmission project with specific reference to the proposed 400 kV Transmission Line from Jaunpur to Obra on the Protected area of Kaimur WLS is summarized as below:

#### a. Habitat Loss and Fragmentation:

Powerlines or specially powerline corridors, are known to affect many different animal groups, predominantly birds. These impacts are largely associated with fragmentation & degradation of wildlife habitats along the powerline corridor i.e. Right of Way. The large scale felling of trees along the line corridor might impact the nesting sites of birds as well as habitat and movement of others arboreal species like monkey, primates etc. Available in that area.

In case of 400 kV D/C Jaunpur Obra Transmission line the RoW is considered as 46 meter, wherein the standing trees are required to be either felled, looped/pruned as necessary for casting of tower foundation, tower erection & electrical conductor stringing. The 585 number of trees and 17 bamboo bushes as enumerated along the line corridor might impact the area along.

#### b. Electrocutation & accidental collision of Birds:

As per available/listed data risk of electrocution of birds are mostly related to distribution/transmission lines up to 110 kV due to dimensions and spacing between two conductors, electrocution of Bird/Raptor by EHV lines of 132kV & above is quite rare. Moreover, collusion of birds is mostly reported during landing and takeoff in area close to water bodies, designated bird areas/ sanctuary having large congregation of birds or line intersecting identified bird fly or migratory paths hence bird diverter even if placed on EHV line can only be effective if it is installed in the fly path of birds. We, Obra C Badaun Transmission Limited are following its cardinal principle of avoidance take utmost care to avoid such areas while selecting the optimum line route of new transmission line.

#### c. Induced Impact on Wildlife from Construction workers.

Construction manpower will be required for execution of the project and makeshift construction camps and will be set up at the tower foundation/erection sites as per site requirement. Generally, for tower foundation works, local manpower/workers will be engaged. However, for specialized works like tower erection and stringing, migrant laborers are usually engaged. The induced impact on the wildlife of Kaimur WLS from such construction workers is the likelihood of involvement in hunting/trafficking of wild animals and other unlawful activity during the execution of the project.

### IV. SAFEGUARD OF WILDLIFE PASSAGE

The transmission line will not create any large barriers to wildlife and bird movements. As per Bio diversity Impact Assessment study carried out by us in this area reflects No major Flora and Fauna found in the area near to Transmission Line. While the transmission line alignment does not pass through any key wildlife habitat discussed in Kaimur Wildlife Sanctuary Management Plan (much of it is barren or scrub forest present in the project route) and is not expected to cause any net loss of species. All the plant species coming within the ground clearance route are very common to the area and more vigorously distributed throughout the wildlife sanctuary.

- As per Indian Electricity rule, the minimum ground clearance for 400 kV Transmission line is 8.84 meter 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 8.84 meter which is sufficient for safe passage of animals and others mammals.

- In addition to the above, felling of trees will be minimized to 310 trees and 9 bushes and further efforts will be to reduce felling of trees. Trees below conductors will be felled and natural regeneration will be allowed in that area.
- Trees will be loped to an extent to maintain clearance of 5.5 mtr from Conductors.
- The net impact of electrocution of large birds is not considered significant because there has been no documented evidence of large bird kills from the existing TL lines around project area. But measures to avoid Bird collision shall be taken.
- The Stringing of conductor for the transmission line shall be carried out maintaining a separation between energized conductors. Vertical distance between two conductors: 8 m (appx.) The above arrangement, will nullify the likelihood of electrocution of large winged birds like hornbill, because the distance between energized conductors will be always more than the maximum wing span of the bird.
- To prevent accidental collision of birds with the conductor bird diverter/colored/contrast marker devices will be installed on the earth wire to make it visible to birds from long distance.
- 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.
- Anti- Climbing Devices (ACD's) to be used at tower four corners gates with two opening and two non-opening fenced by using barbed wire and accessories for avoiding animals to climb the tower structure.
- During the construction phase, the excavated pits shall be properly barricaded and fenced so as to prevent accidental falling of mammals in the vicinity of the construction sites.
- No work will be carried out at nights (i.e. between sunset & sunrise) in the forest area.
- No labour camp will be established in Protected area and its ESZ.
- Alternate Fuel (LPG) will be provided to Labourers for cooking purpose.
- No new passage for transportation of construction Material will be made. Existing approaches will be uses.
- Awareness-raising will be an important means to mitigate this risk. The contractor and his workers must be informed on the Forest and Nature Conservation Act, Rules and Regulations and copies of these must be made available to them. Workers must be made aware of the fines and penalties for poaching, as well as the risk of job loss, if caught in these illegal activities.

