**KARNATAKA POWER TRANSMISSION CORPORATION LIMITED**



# User Manual

# NAKSHE-KPTCL mobile app
# for
# GIS based survey of Transmission Network Assets

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## Table of Contents

## 1. About "NAKSHE-KPTCL":

**"NAKSHE-KPTCL" is a GIS (Geographic Information System) based** survey mobile app, developed for KPTCL by KSRSAC (Karnataka State Remote Sensing Application Center) under K- GIS initiative for carrying out GIS survey of Transmission network assets such as Transmission towers, Substations, Transmission lines( Overhead & Underground) and EHT points which is to be used by Substation and TLM subdivision field officials.

This mobile app has below features incorporated:

a) Capture Latitude, Longitude of transmission assets such as Substation boundary points, Towers location, UG cable depth points, UG cable joint bays and EHT Consumer points.

b) Collect attribute details of all the assets such as Substations, Towers, OH lines, UG cables & other associated equipment's by choosing customized parameters from the dropdown list.

c) Capture incremental details of newly added and modified assetssubsequent to initial survey.

d) Send/Sync data to GIS central server after carrying out each survey in field.

e) View the survey progress statistics.

This user manual contains a complete guide for using the NAKSHE-KPTCL mobile app by the field users to capture the geo-spatial data of transmission assets - Substations, Towers, EHT points, Overhead lines and Underground Cables. It also includes the parameters specified for the PM Gati Shakthi National Master Plan requirements on GIS platform.

# 2. Guidelines to be followed for using the "NAKSHE" Mobile app:

## 2.1 General

a) Grant necessary permissions: While installing the application ensure that all permissions are allowed to access essential features such as camera, location, media, and files to operate correctly.

b) Ensure internet connectivity during login: Make sure your device is connected to the internet while logging in, to prevent connectivity issues and to download necessary datasets.

c) Ensure minimum android version that supports app: Ensure that the mobile hasandroid version of 5.0 and above for the correct working of the app.

d) Ensure Accuracy of the location Capture: Before capturing locations, wait for at least a minute to enhance the accuracy of the location data being captured.

e) Sync data before reaching record limit: Regularly sync data to the database afterreaching 10 records to prevent data loss and ensure efficient data management.

f) Sync captured data before logging out or uninstalling: Before logging out or uninstalling the app, synchronize the captured data to the database to avoid losing any important data of survey.

g) Permission for Auto update to be enabled for this app.

## 2.2 Towers:

a) Maintain consistent circuit details: When adding circuit information, label themconsistently throughout the survey to avoid confusion. For example, designate circuits as Circuit 1 and Circuit 2 by choosing proper line names.

b) Consistently label towers as "real" and "shared": Ensure uniform labelling of towers as either real or shared across the survey to maintain clarity and

accuracy.

c) A sequence number for towers of a line/circuit should be prepared before starting the survey. Tower sequence No. should be in sequence, in case of tapped line sequence number should be given to trunk line first then the continuation of sequence number should be given to the tap line.

d) The location coordinates to be captured by holding the mobile/GPS device at thecenter or as near to assets as possible. While capturing the height of tower and ground clearance of line span, the device shall be held right below the tower andline span respectively.

## 2.3   Substations:

a) Boundary points for Substation area (Total) and Security area (Yard) to be captured separately (minimum 4 points)

b) Lat/Long to be captured by adding points for each corner and turning points

## 3. LOGIN page
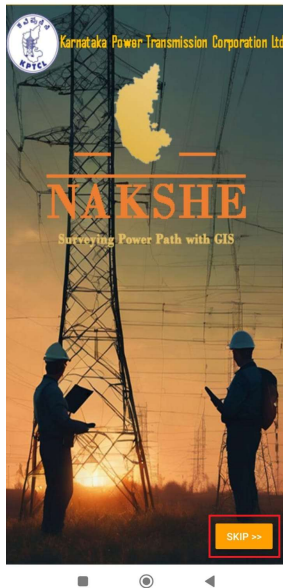
| | | |
|---|---|---|
| **1** |  | As soon as we click on **NAKSHE APP** this page is displayed, click skip to move to next page |
| **2** |  | Click the zone that need to be surveyed |

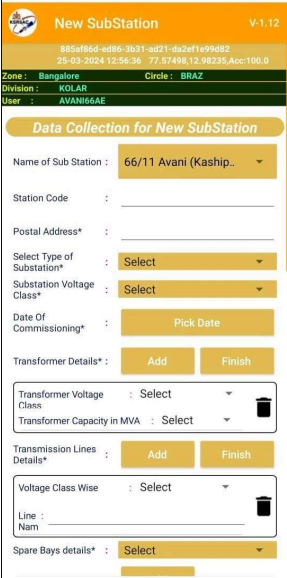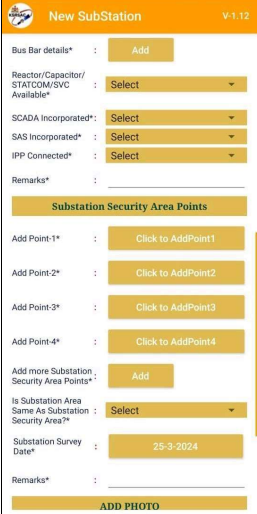| 3 |  | Enter the login details and click submit |
|---|---|---|
| 4 |  | Click Next to enter the survey details |
| 5 |  | Click field data collection to collect the data of tower or EHT or UG cable or to view statistics |

| 6 |  | a) Click Tower to add survey details of tower or Click EHT points to add details of EHT points - for TLM JE <br><br> b) Click Substation to add survey details of substation - for Substation AE |
|---|---|---|
| 7 |  | a) Click New tower to add new tower details - for TLM JE <br><br> b) Click New Substation to add new substation details - for Substation AE |
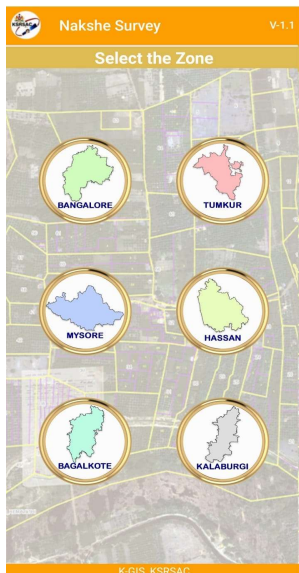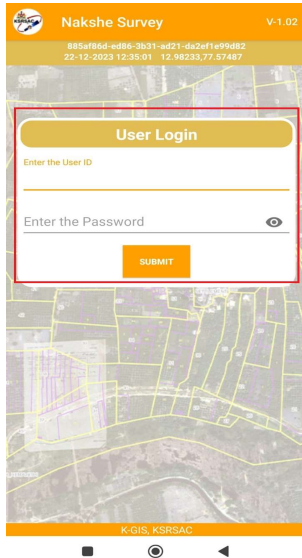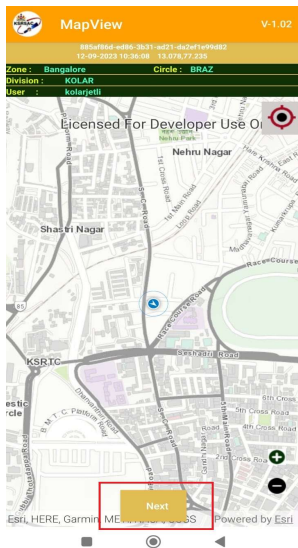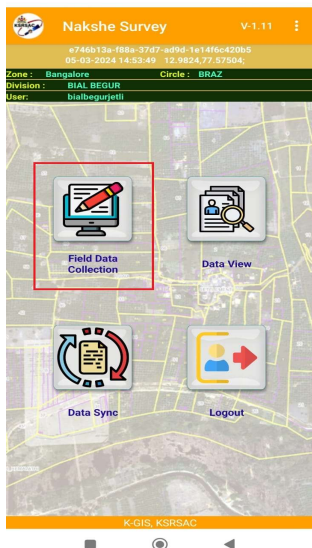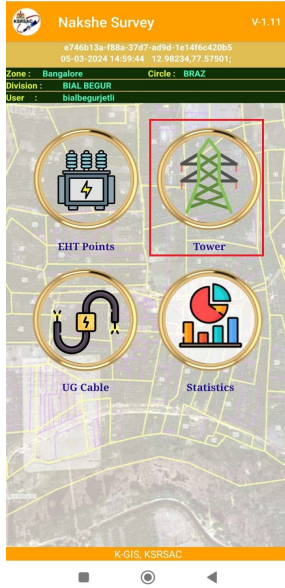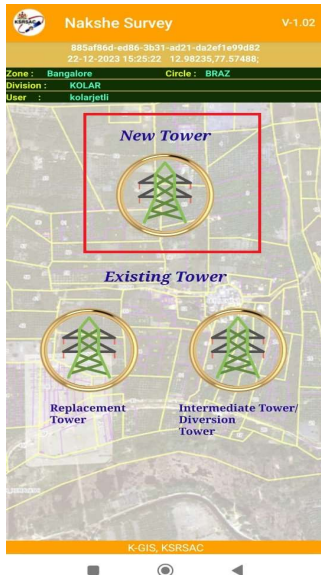
## 4. SUBSTATION

| 1 |  | a) Name of Substation will be default populated according to the login; <br><br> b) Enter all details like Station Code, Postal Address, Type of Substation, Substation Voltage class, Date of Commissioning. <br><br> c) Transformer details of all voltage classes- if multiple transformers are present, enter the details of all the transformers and click finish to save <br><br> d) **Transmission Line Details Voltage class-wise - Add all the transmission line details pertaining to that substation. Line names will be listed as soon as 2 characters of the line name is entered, select from the list. Then click finish to save the details of the line** <br><br> e) Enter spare bay details if any |
|---|---|---|
| 2 |  | a) Enter Bus bar details, Reactor/Capacitor/STATCOM/SVC Available, SCADA Incorporated, SAS Incorporated, IPP connected and Remarks <br><br> b) **Add substation security area points - which is the yard area of the substation, minimum 4 points are mandatory and upto 14 points can be added (add the points wherever there are turnings)** <br><br> c) **Choose YES if Substation area is same as Substation security area otherwise choose NO and capture minimum 4 more points (max 14 points) for Substation area** <br><br> d) Substation Survey date will be default populated e) Enter Remarks if any |

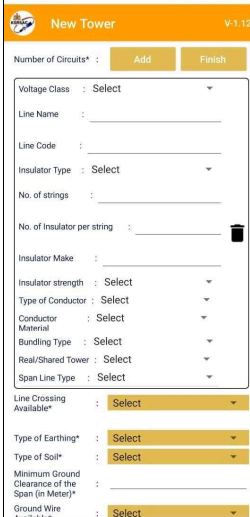| 3 |  | a) **Add photo of the substation - minimum 1 photo is mandatory and maximum 2 photos**<br><br>b) Click submit after entering all the details |
|---|---|---|
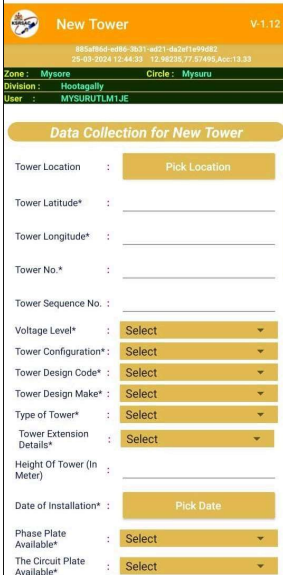
## 5. TOWERS

| | |
|---|---|
| 1  | a) Pick location of the tower<br><br>b) **Tower No. should be "0" for gantry tower at both the ends of the line**.<br><br>c) **Proper Tower sequence No. should be entered.**<br><br>d) Choose Voltage level, Tower Configuration, Tower Design Code, Tower Design Make, Type of Tower, Tower Extension Details.<br><br>e) Height of Tower - enter if the height of the tower is known; it is a non-mandatory field -<br><br>f) Choose Date of Installation, Phase Plate Available, The Circuit Plate Available |
| 2  | a) **Add Number of Circuits and circuit details - Choose Real for Real/Shared Tower 1st circuit and maintain the same for all towers, choose Shared for all other lines other than 1st circuit and maintain the same for all towers**<br><br>b) Choose / add Line crossing available , Type of Earthing, Type of Soil<br><br>c) Enter the Minimum Ground Clearance of the span if known |

| 3 |  | a) Choose Ground Wire Available, Anti Climbing Device Available, Danger Board Available, Spacer Available, Vibration Damper Available, Step Bolts Available, Tower Land Type, ADSS Available, Is Retaining Wall Available<br><br>b) Date of Survey is default populated, enter remarks<br><br>c) **Take Photo of the tower- 1 photo is mandatory out of 2 photos**<br><br>d) Click Submit to save the record |

## 6.    EHT POINTS

| 1 |  | a) Type 2 characters of Name of the EHT Station and list will be displayed<br><br>b) Choose / Add Select Type of Substation, Sanctioned Load in kVA, Substation Voltage Class, Date of Commissioning, Transformer Details, Transmission Lines Details, Firm Name and Address, Select the Date of Survey, EHT Location |
| --- | --- | --- |
| 2 |  | a) Add a photo of the EHT Point and click submit to save the details |

## 7.    UG CABLE

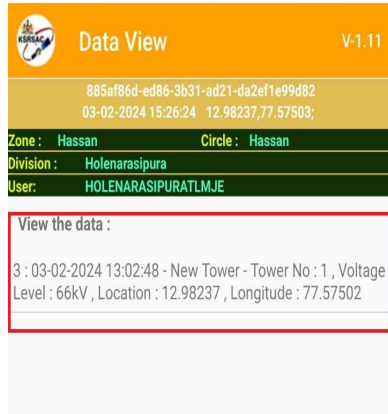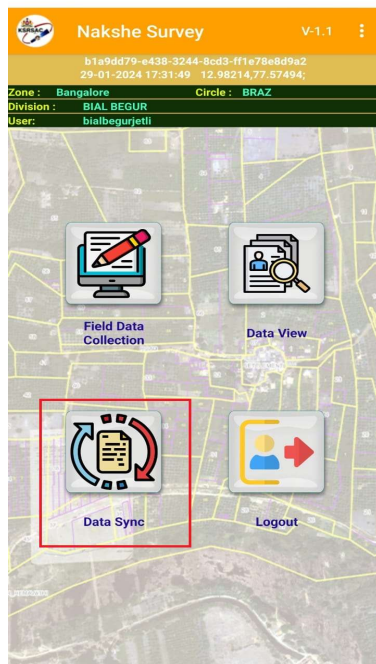| | | |
|---|---|---|
| 1 |  | a) Enter 2 characters of Name of cable , list will be displayed- choose the name from the list<br><br>b) Choose Ownership of cable, Voltage, Type of Line, Originating Source, Terminating Source, Type of laying, Size of Cable, Type of UG Cable conductor, Current Carrying Capacity of UG Cable, Line Configuration, UG Cable Make, Date of commissioning<br><br>c) Add Joint Bays of the cable |
| 2 |  | a) Choose OFC Cable available<br><br>b) **Add points of the cable, add points in an interval of 20 meters if the cable laying is straight, otherwise take the points where ever the turnings available**<br><br>c) Add a photo of the cable / cable laying spot d) Click submit to submit the details of the UG cable |
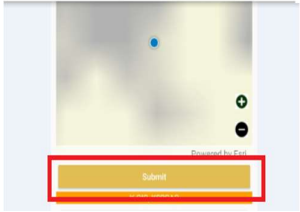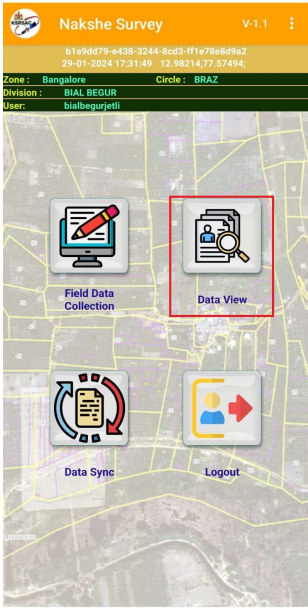
## 8. DATA SYNC

| | | |
|---|---|---|
| 1 |  | Preview will be displayed, go back if any changes is required in the data then edit and click submit |
| 2 |  | Click Data View to view the submitted data before Data Sync to Central database. |

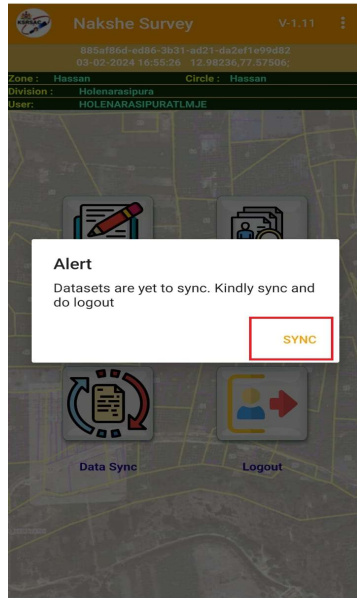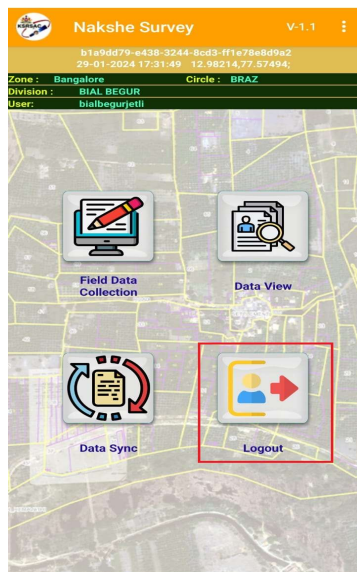| | | |
|---|---|---|
| 3 |  | Click view the data to view the submitted data. The data can be deleted, if the entered data is incorrect. |
| 4 |  | Click Data Sync to send the submitted data to the central database. Select the data records in the next page and click sync. Only 10 records can be synced at a time, remaining records can be selected for sync in the next set, and so on. |

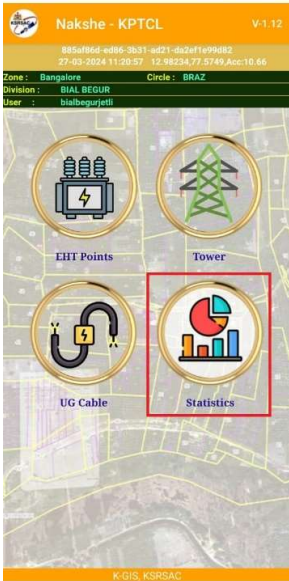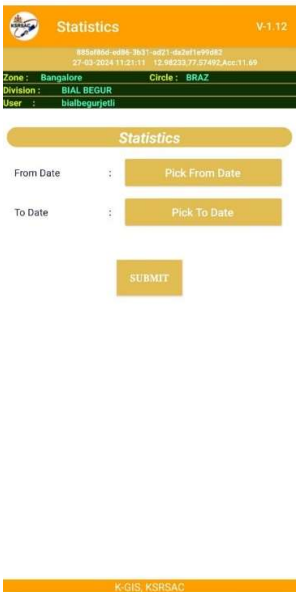| 5 |  | Data Sync is mandatory(to send collected data to central database) before logging out of the app. |
| --- | --- | --- |
| 6 |  | Click Logout to logout of the application logout cannot be done without Data sync |

## 9. STATISTICS

| 1 |  | View the statistics of that division survey data by clicking Statistics |
|---|---|---|
| 2 |  | Select From date and To date click submit to view the survey statistics during that period |