Mapping of EHV Transmission Lines of MSETCL on Bhuvan WebGIS Platform

19\textsuperscript{TH} January 2018
The largest electric power transmission utility in state sector in India
652 EHV Substations
44715 Ckt. kms of Transmission Lines
119212 MVA Transformation capacity
Transmission system capable of handling about 21000 MW of power
Transmitted 139 Billion Units of energy in the year 2016-17
Staff strength of around 16870 employees all across Maharashtra
MSETCL GIS JOURNEY

ROI

APPLICATIONS

MAP/IMAGERY

FINANCIAL VIABILITY
MSETCL GIS JOURNEY
GIS HOMEPAGE

About MSETCL-GIS

NRSC, ISRO and MSETCL, Maharashtra is working for spatial integration of information on Electrical Transmission Infrastructure in Web GIS environment.

Select Substations

Select Lines
MSETCL SUBSTATIONS

Substation Name: KHARGHAR
Voltage Rating: 400 KV
Capacity: 1045.00
District: RAIGAD
Taluka: PANVEL
Date of Commissioning: 1999-03-22
Division: RS KHARGHAR
Single Line Diagram
MSETCL SUBSTATIONS
LINE MAPPING CHALLENGES

TOWER CO-ORDINATES

CORELATION BETWEEN LINE AND TOWER
LINE MAPPING CHALLENGES

Single Circuit

Double Circuit

Multi Circuit
LINE MAPPING CHALLENGES

TOWERS

Multiple Lines / Tower

Multiple Tower Config./Line

CONDUCTORS (CABLES)

3 Cables / Line

Multiple Voltage Levels, ROW

CORELATION
OVERCOMING CHALLENGES
LINE SELECTION
TOWER SELECTION
NETWORK SELECTION
Line Name: 220 KV KHARGHAR - BORIVALI 1
Voltage Rating: 220
Date of Commissioning: 20170311
Line Length: 39.00
Number of Towers: 0

Export to xlsx

<table>
<thead>
<tr>
<th>Line Name</th>
<th>220 KV KHARGHAR - BORIVALI 1</th>
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<tbody>
<tr>
<td>Voltage Rating</td>
<td>220</td>
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<tr>
<td>Date of Commission</td>
<td>20170311</td>
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<tr>
<td>Line Length</td>
<td>39.00</td>
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<tr>
<td>Number Of Towers</td>
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<td>Conductor Type</td>
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<td>Conductor size</td>
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<td>Number of Subconductors</td>
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<td>Thermal Loading</td>
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<td>Surge Impedance Loading</td>
<td>132</td>
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<tr>
<td>Rated Capacity (HVDC):</td>
<td>150</td>
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<td>Authorisation Group Name</td>
<td>KHARGHAR</td>
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<td>Authorisation Group Code</td>
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**Tower Number:** 45  
**Route Name:** 220 KV KHARGHAR BORIVALI KALWA MC  
**Tower Design:** MULTI CIRCUIT  
**Voltage Rating of Tower:** 220  
**Date of Commissioning:** 20120624  
**Tower Type:** TENSION

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<tr>
<th>Tower Number</th>
<th>Route Name</th>
<th>Tower Design</th>
<th>Number of Stringed Circuits</th>
<th>Number of Spare Circuits</th>
<th>Voltage Rating of Tower</th>
<th>Date of Commissioning</th>
<th>Tower Type</th>
<th>Tower Configuration</th>
<th>Hardware Type</th>
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</tbody>
</table>

**Line Details:**
- **Line Name:** 220 KV KHARGHAR - BORIVALI 1
- **Line Name:** 220 KV KHARGHAR - BORIVALI 2
- **Line Name:** 220 KV KALWA - TFIPL
- **Line Name:** 220 KV KALWA - SIEMENS

**Zone:** 7000  
**Circle:** 7100  
**Division:** 7120  
**Subdivision:** 7122
LOAD CHOROPLETH
PROXIMITY ANALYSIS

Substation Proximity

Line Proximity
MSETCL GIS PROJECT

18th September, 2017

Way ahead..

SAP Integration  Mobile App  Analytics
HOW GIS IS HELPING US TO WORK BETTER

✓ Management of Right-of-Way (ROW) and vegetation management

✓ Geo-tagged documentation of line hardware conditions & planning of maintenance activities

✓ Quick response in case of breakdown and emergencies

✓ Identifying and finalizing site for new substations

✓ Route survey, selection and finalization of new lines

... and so on
Message from our CMD

Rajeev Kumar Mital, IAS

“We have mapped our assets on Bhuvan web based GIS platform completely in-house and in record time. We have used very innovative and prolific approach for mapping of transmission lines and towers. We have a very talented, passionate and certified SAP-ERP team working behind this development. We look forward to offer our experience and expertise gathered in SAP-ERP and GIS domain with other power utilities that are planning to implement such projects.”
THANK YOU