



# Mapping of EHV Transmission Lines of MSETCL on Bhuvan WebGIS Platform

19<sup>TH</sup> January 2018

MSETCL IN

Nutshell



- ✓ 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

2014



IDEA

# MSETCL GIS JOURNEY

ROI

APPLICATIONS

MAP/IMAGERY

FINANCIAL  
VIABILITY



# MSETCL GIS JOURNEY

2017



भुवन

# 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

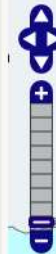


## Maharashtra State Electricity Transmission GIS (MSETCL-GIS)



+ Show Toolbar

Welcome User Logout



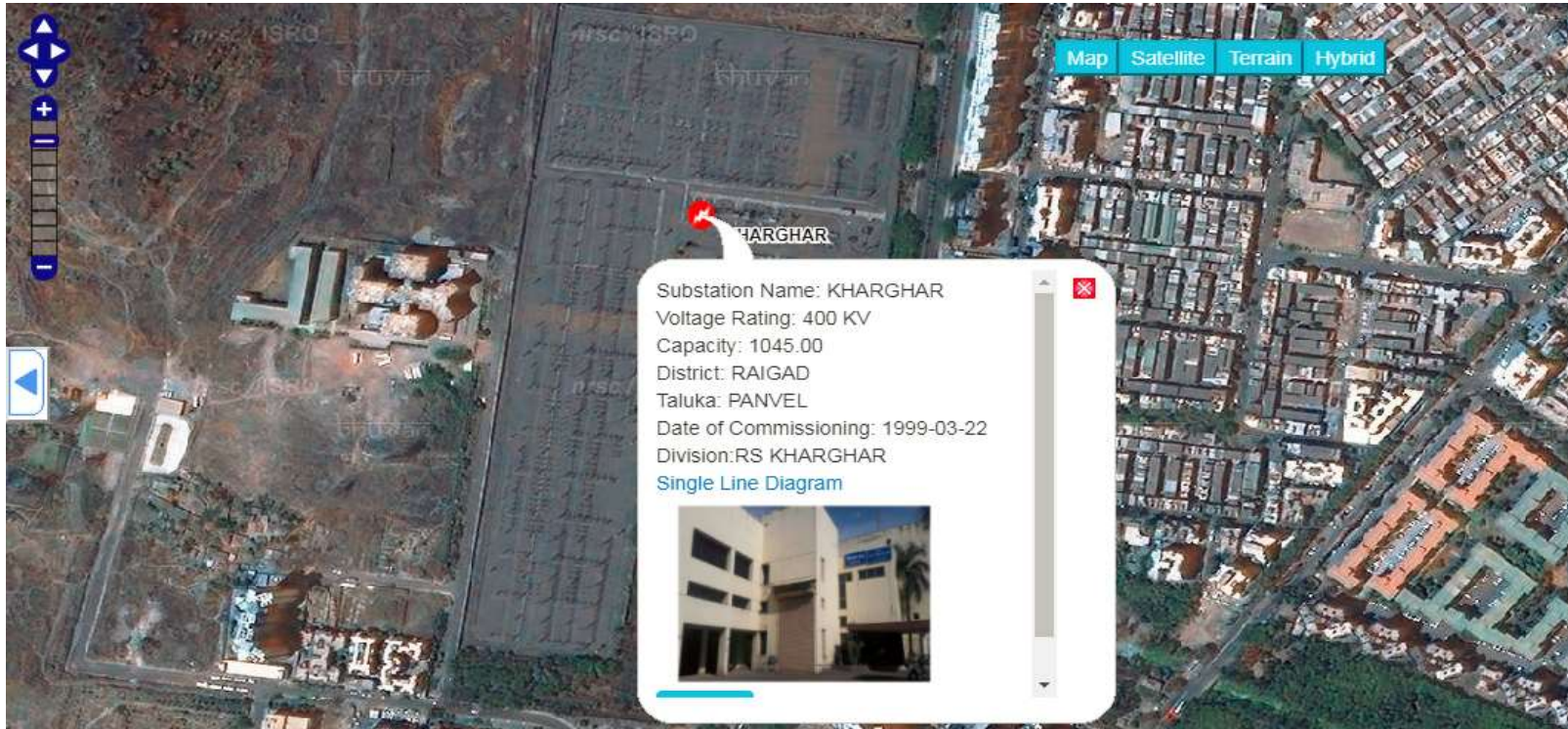
Arab Emirates

Oman

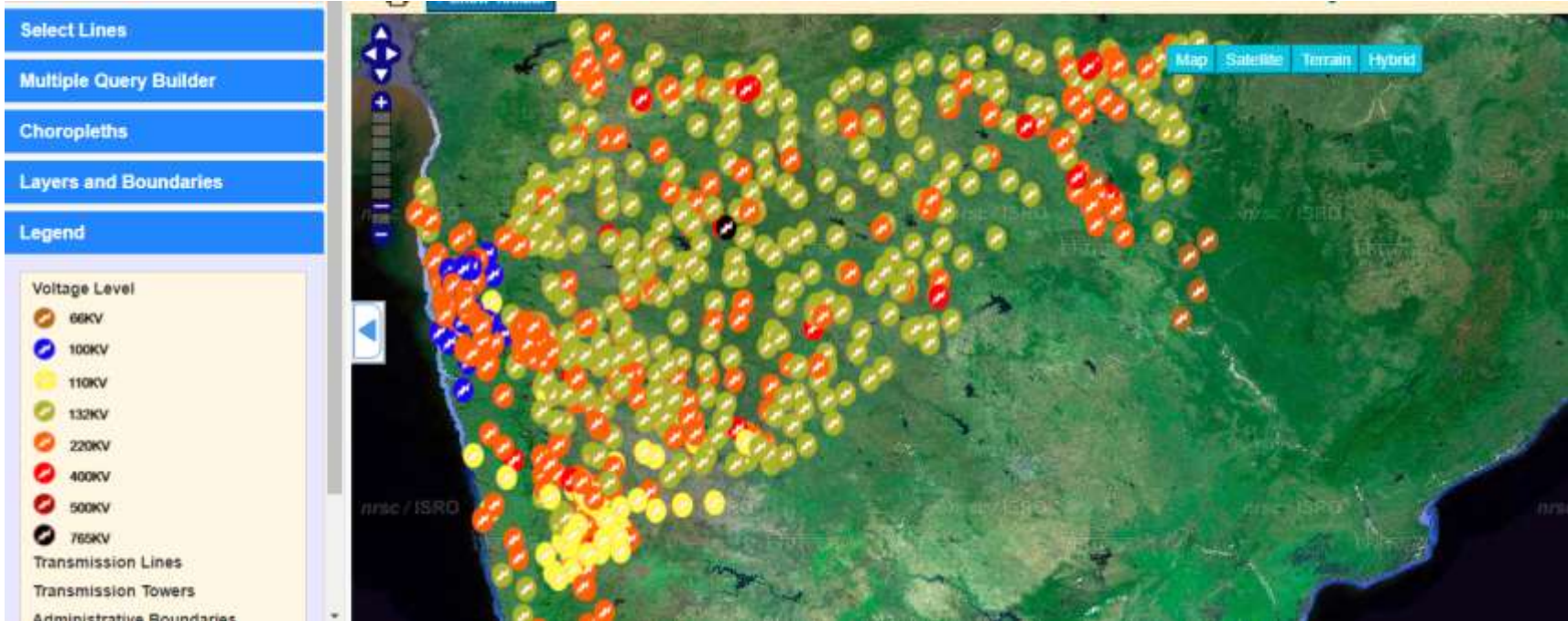
Map Satellite Terrain Hybrid



# MSETCL SUBSTATIONS



# MSETCL SUBSTATIONS







# LINE MAPPING CHALLENGES



**TOWER  
CO-ORDINATES**

**CORELATION BETWEEN  
LINE AND TOWER**

# LINE MAPPING CHALLENGES

## Single Circuit



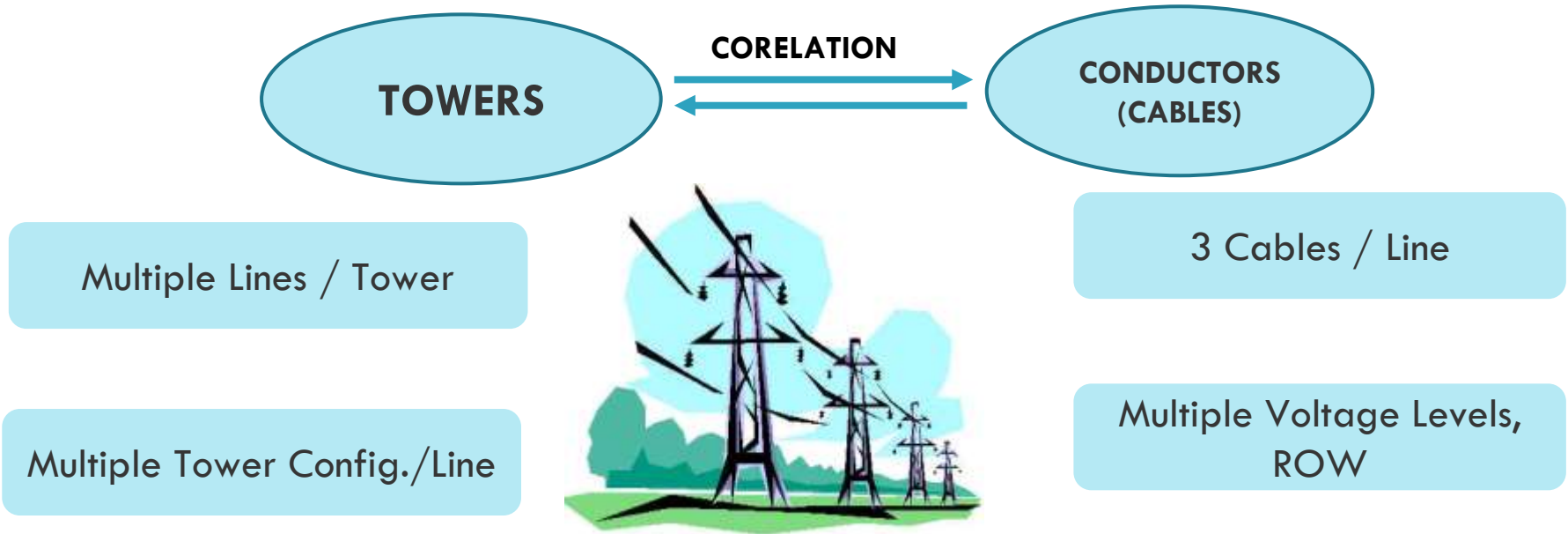
## Double Circuit



## Multi Circuit



# LINE MAPPING CHALLENGES





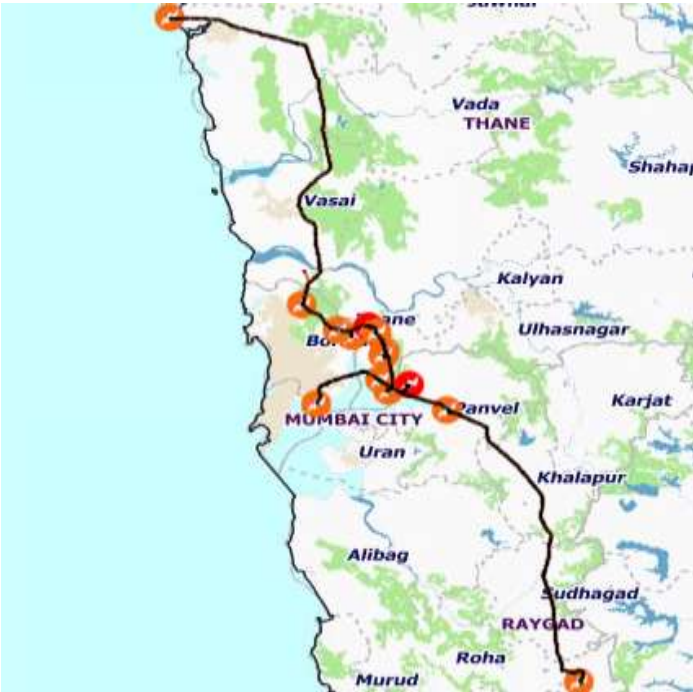
# LINE SELECTION



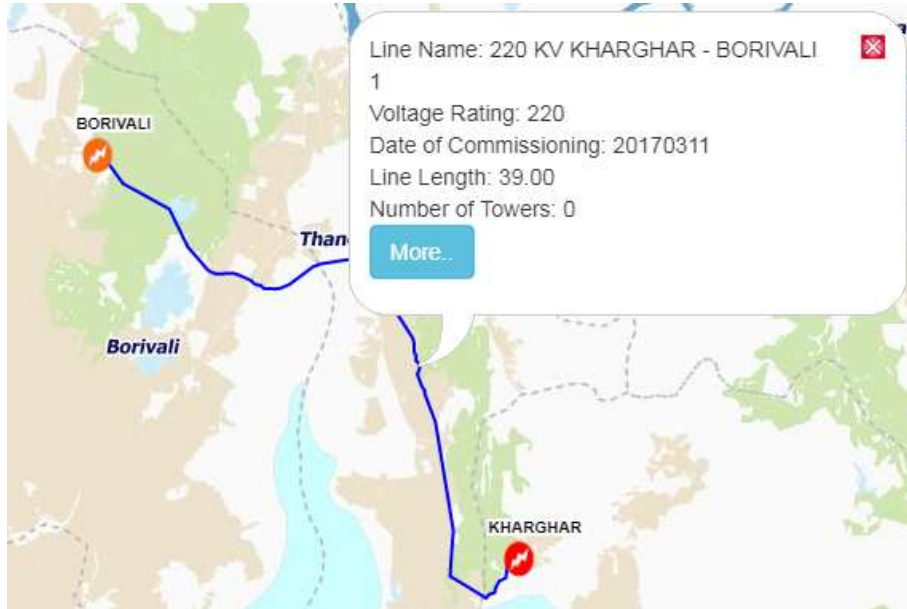
# TOWER SELECTION



# NETWORK SELECTION



# LINE ADDITIONAL INFORMATION



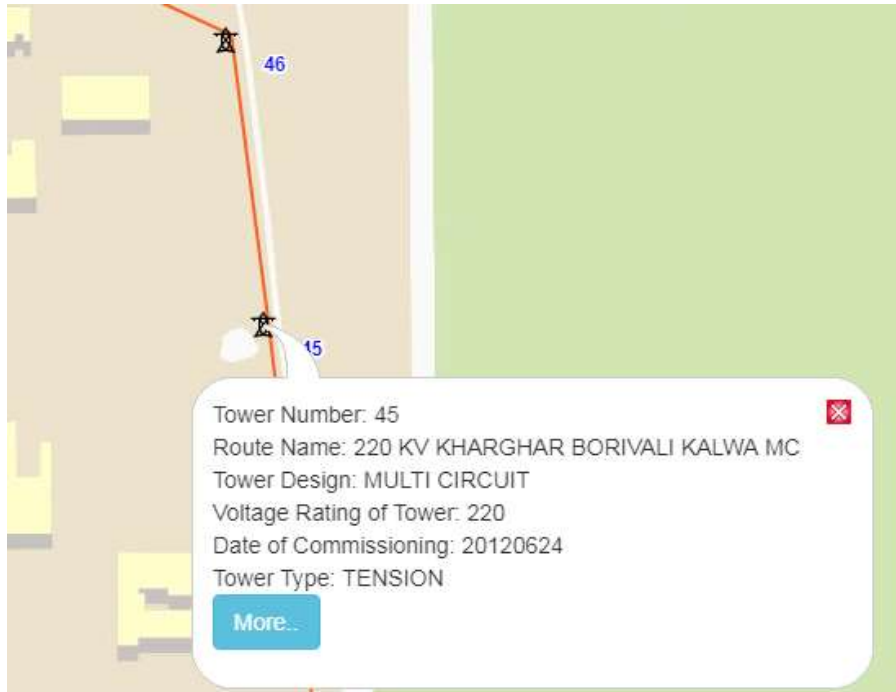
Export to xls

Line Name:	220 KV KHARGHAR - BORIVALI 1
Voltage Rating:	220
Date of Commissioning:	20170311
Line Length:	39.00
Number Of Towers:	0.00
Conductor Type:	AAAC MORCULLA
Conductor size:	0.00
Number of Subconductors:	2
Thermal Loading:	0
Surge Impedence Loading:	132
Rated Capacity(HVDC):	
Authorisation Group Name:	KHARGHAR
Authorisation Group Code:	J373

Print Close



# TOWER ADDITIONAL INFORMATION



The image shows a map with two power towers, labeled 45 and 46, connected by a red line. Tower 45 is at the bottom, and tower 46 is at the top. A white pop-up window is open over tower 45, displaying the following information:

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

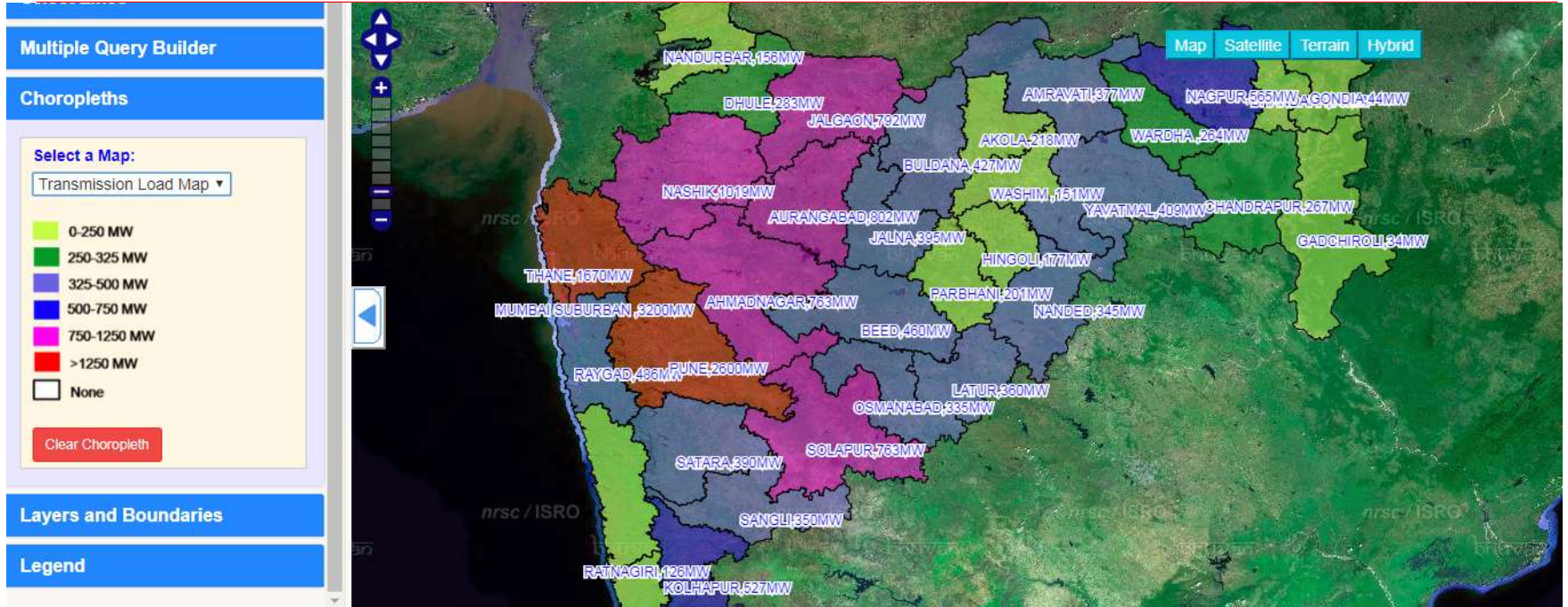
There is a blue button labeled "More..." at the bottom of the pop-up window and a red 'X' icon in the top right corner.

Export to .xls

Tower Number:	45
Route Name:	220 KV KHARGHAR BORIVALI KALWA MC
Route ID:	M-J373-H048
Tower Design:	MULTI CIRCUIT
Number of Stringed Circuits:	4
Number of Spare Circuits:	0
Voltage Rating of Tower:	220
Date of Commissioning:	20120624
Tower Type:	TENSION
Tower Configuration:	VERTICAL
Tower type Code:	
Hardware Type:	DTN
Line1 Name:	220 KV KHARGHAR - BORIVALI 1
Line2 Name:	220 KV KHARGHAR - BORIVALI 2
Line3 Name:	220 KV KALWA - TFIPL
Line4 Name:	220 KV KALWA - SIEMENS
Line5 Name:	
Line6 Name:	
Zone:	7000
Circle:	7100
Division:	7120
Subdivision:	7122

Print Close

# LOAD CHOROPLETH



# PROXIMITY ANALYSIS



## Substation Proximity



## Line Proximity



# MSETCL GIS PROJECT

# GoLive

**18<sup>th</sup> 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***

