



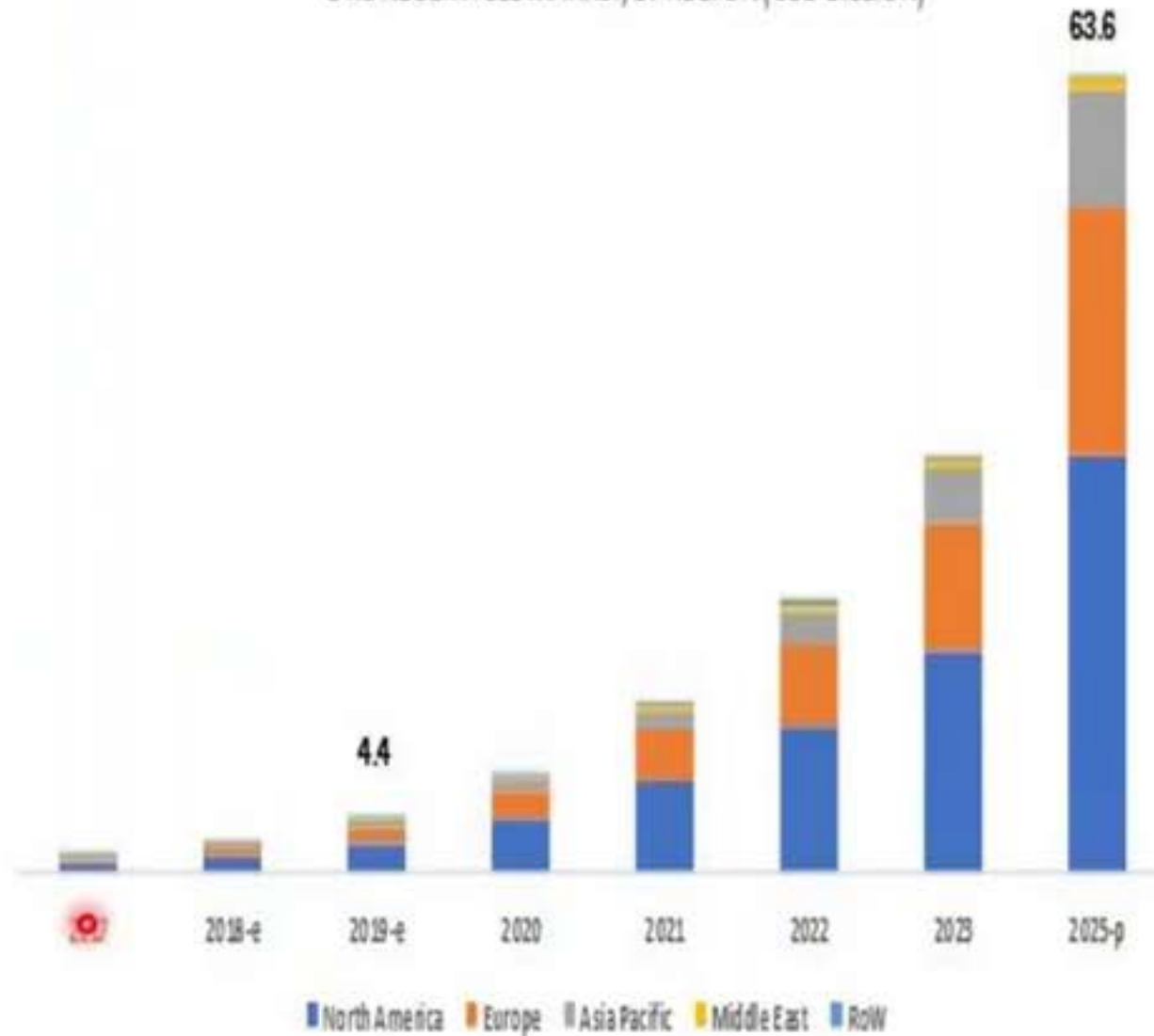
Sterlite Power

Drone Usage in Transmission Line Industry

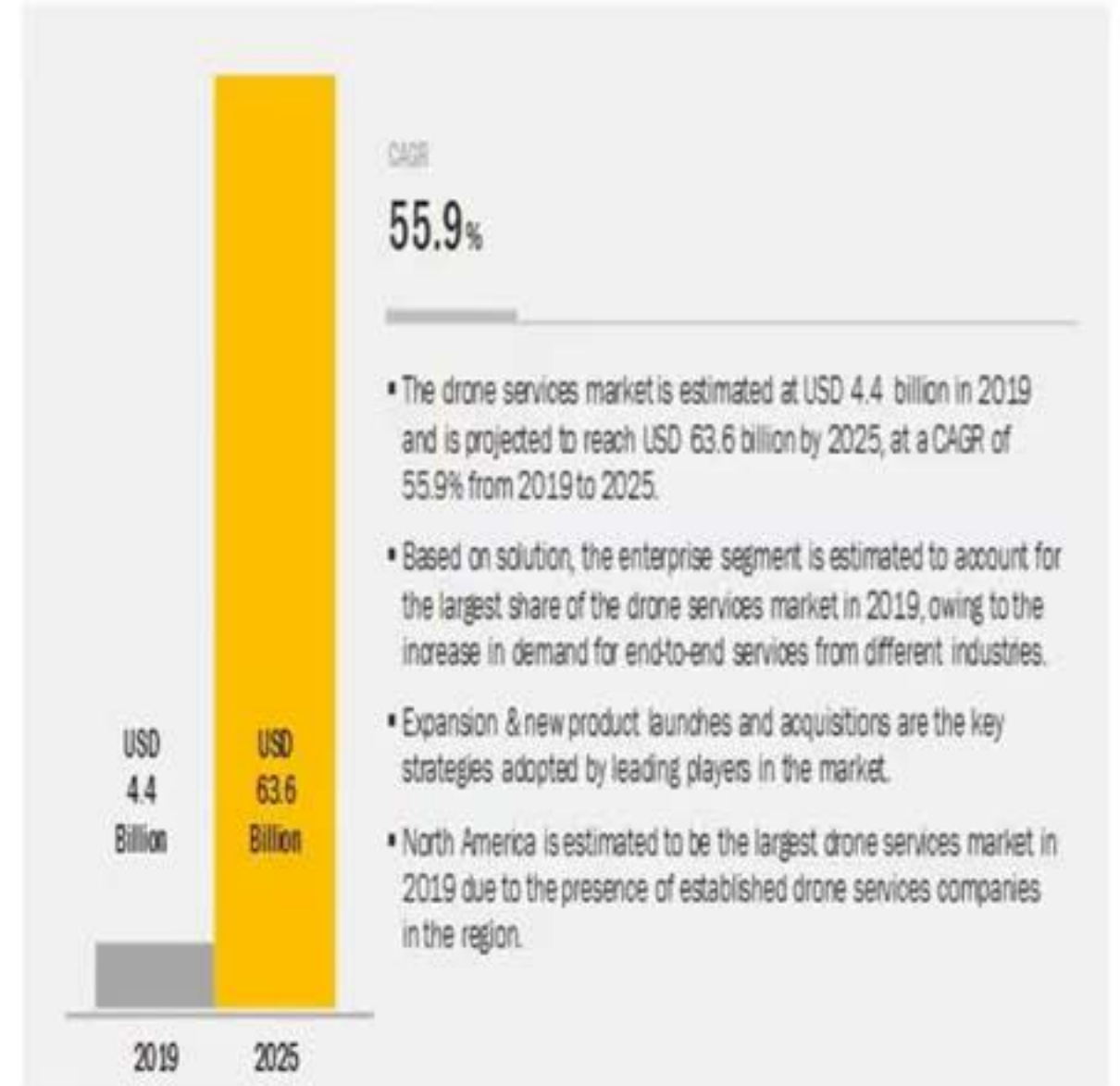


Global Trends in Drone Industry

DRONE SERVICES MARKET, BY REGION (USD BILLION)

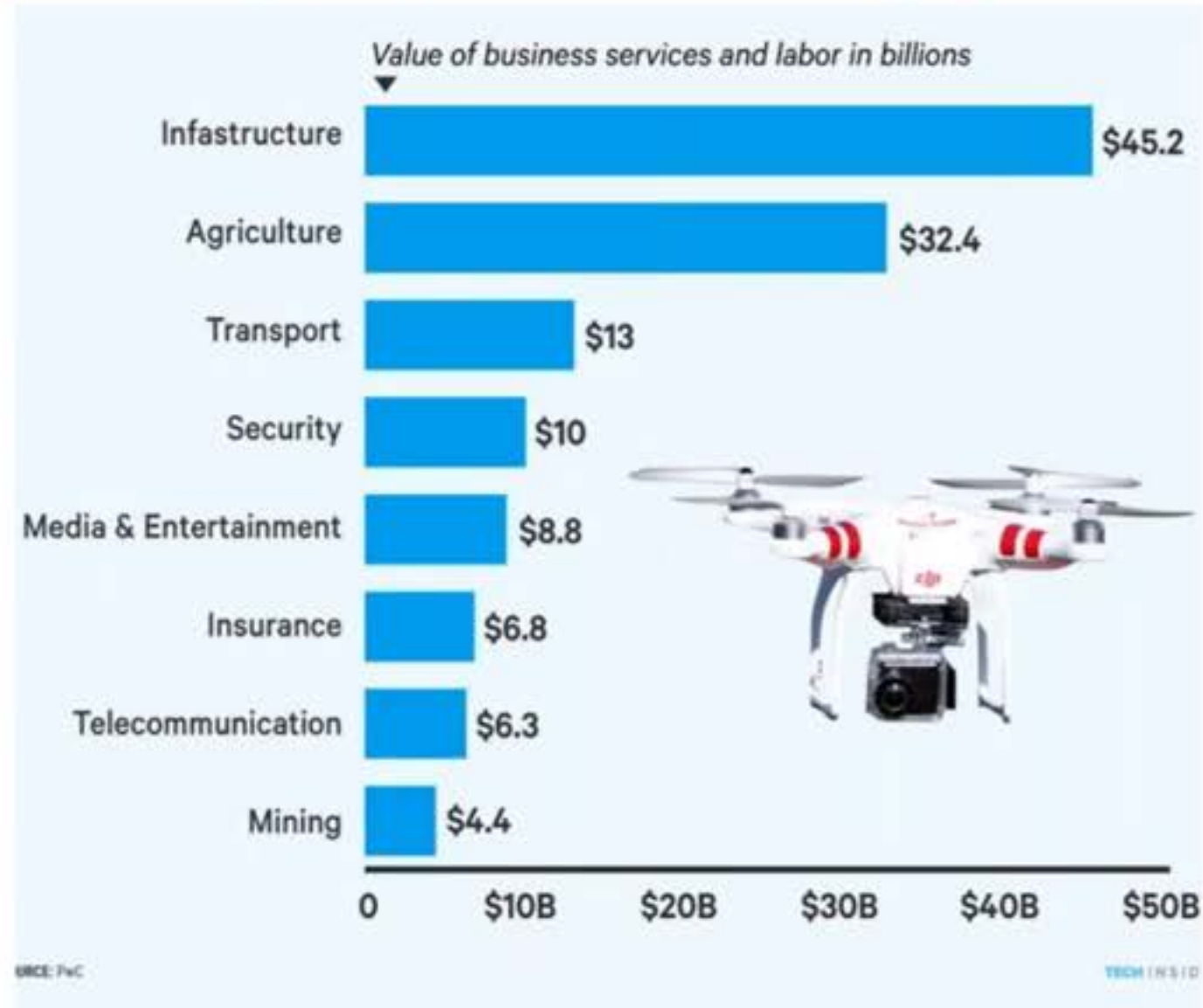


Attractive Opportunities in the Drone Services Market



Global Trends in Drone Industry

(ii) Adoption of drone technology by diff sectors



(iii) Different application of drone technology

Survey on the industrial use of drones

What do users use drones for?



Drone usage in different phases of project life cycle

Bidding Phase



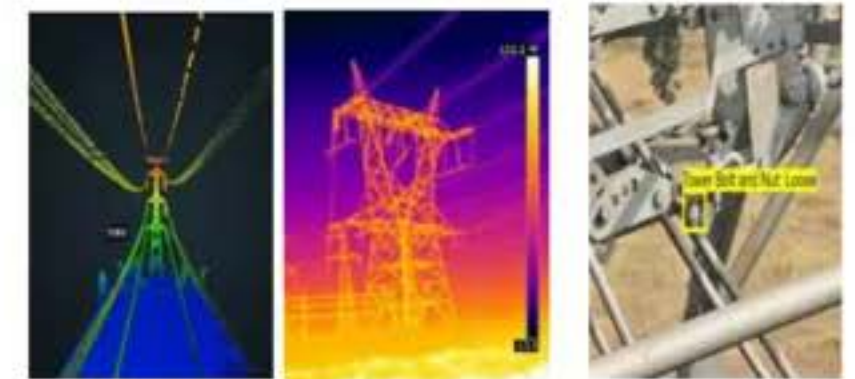
- Topographic survey
- Right of Way mapping
- Volumetric analysis(Cutting/filling) of Line & SS

Construction Phase



- Pre Pilot rope pulling using Drone(Drone Stringing)
- Detailed survey of line
- Construction Progress monitoring
- RoW/Hot spot area mapping
- Habitation Analysis

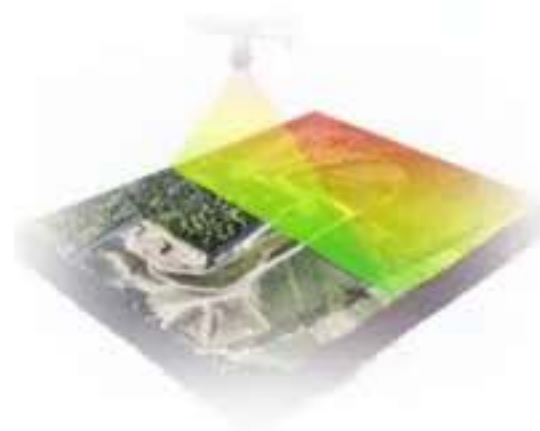
Operation & Maintenance Phase



- **Remote surveillance of asset:**
 - Visual inspection
 - Engineering Calculations: Clearances
 - Vegetation Management
 - IR/Hot Spot Identification

Construction Phase

Detailed Survey Using Drone+DGPS (Photogrammetry Survey)



- ✓ Drone along with DGPS device is used
- ✓ Very efficient and accurate in less to medium vegetation terrains
- ✓ All the outputs are PLS Cadd compatible for tower profiling

Detailed Survey Using Drone+LiDAR (LiDAR Survey)



- ✓ Drone mounted with LiDAR sensor
- ✓ Suitable for any type of terrains as LiDAR can pass through vegetation
- ✓ Very dense and rich data collection as the point density is much higher in LiDAR and is based on actual ground data(Not interpolation)

Construction Phase

Construction Mapping



- ✓ Timely monitoring and mapping of construction activities using drone imageries
- ✓ Great tool in MIS reporting
- ✓ Monitoring is possible in remote and inaccessible locations such as tower heights.
- ✓ Useful in creating an environment of caution among the workers at site by closely watching them remotely
- ✓ To create awareness among workers about the use of safety PPE's

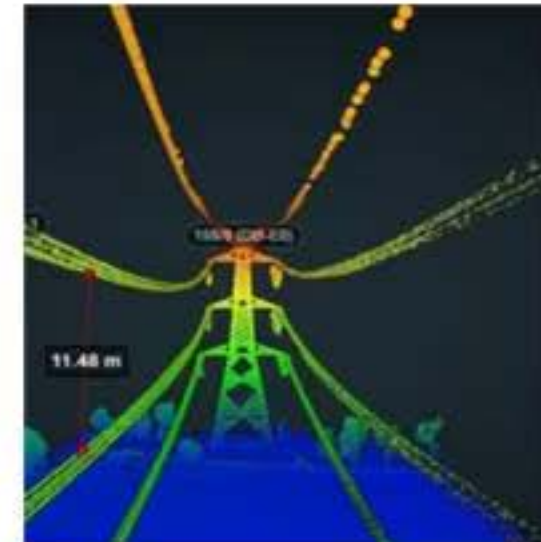
Habitation Analysis



- ✓ The study can be conducted in TL corridor/Tower footing areas for the built up features
- ✓ Drone taken imageries/ortho images of corridor created as a product of survey can be used for the study.
- ✓ More accurate and temporal compared to satellite imageries

Operation & Maintenance Phase

Visual and Thermal inspection of assets



- ✓ Visual inspection of assets like Towers, Conductors, Insulators, Jumpers, Substation equipments for defects.
- ✓ Inspection of TL corridor vegetation growth monitoring.
- ✓ Thermal inspection of towers, conductors, insulators, joints for hotspot identification.
- ✓ UV scanning for corona discharge identification.



 **Sterlite Power**

Sterlite Power





SterlitePower

File Edit View Settings Tools Help

Project: Point Cloud Editor

Create

- Plane
- Box
- Cylinder
- Sphere
- Ellipsoid
- Box with Text
- Text

Layers

- ☐ Cameras
- ☐ Keys
- ☒ The Points
 - ☐ B2D / B3D
 - ☒ Automatic
- ☐ Point Clouds
- ☒ Point Groups
 - Display Properties**
 - ☐ Unclassified
 - ☐ Disabled
 - ☒ Ground
 - ☒ Road Surface
 - ☒ High Vegetation
 - ☒ Building
 - ☒ Human Made Object
- ☐ Triangle Meshes
- ☐ Objects

Processing

1. Initial Processing 2. Point Cloud and Mesh 3. DSM, Orthomosaic and Stereo

Current: 0%

	1	2	3	
Total	1	1	1	0.28

Submit Results

Start Cancel Help

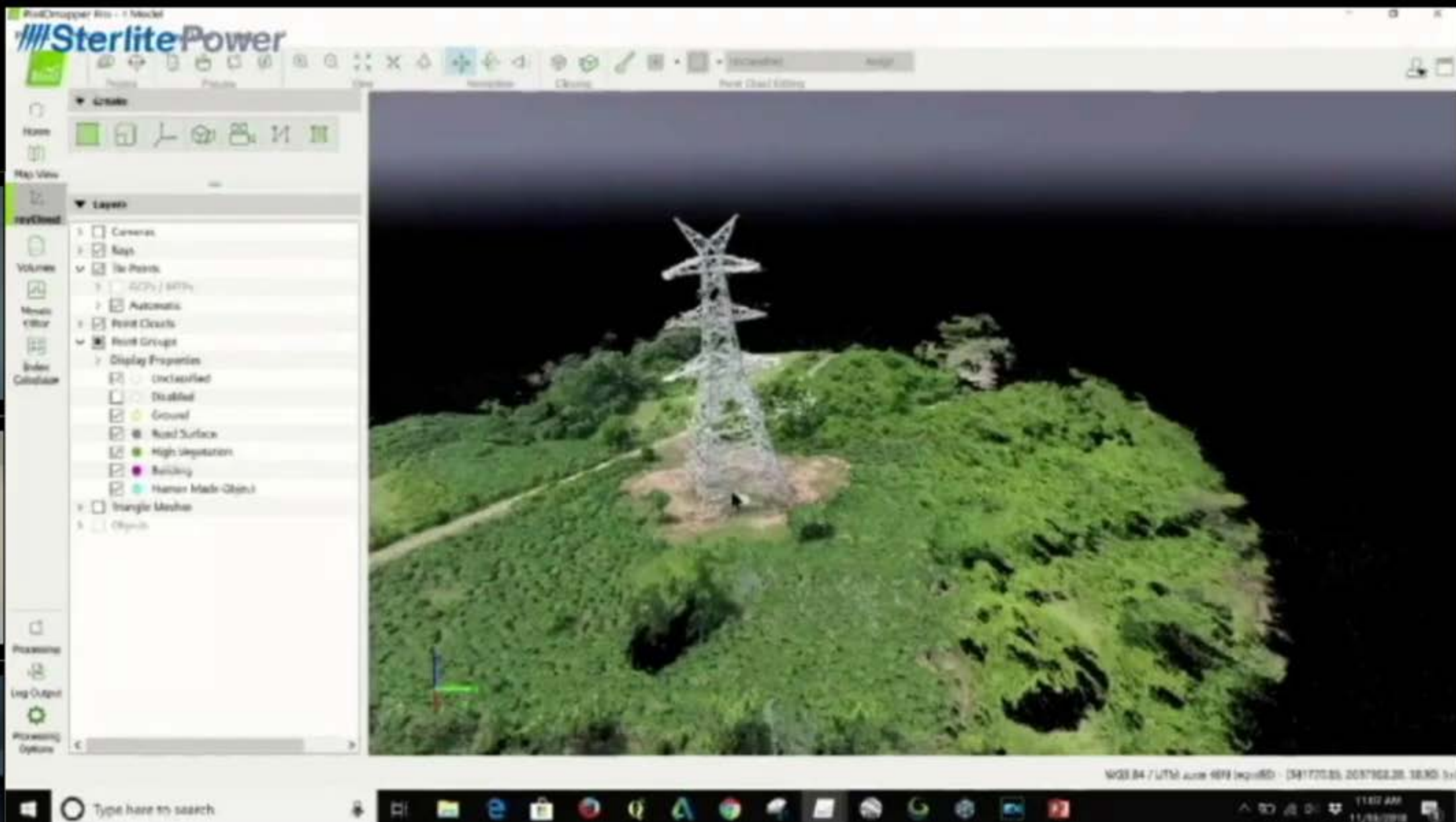
W0008/12764-00-000 (sqm) - (78990.23, 3142078.41, 188.23) DTM

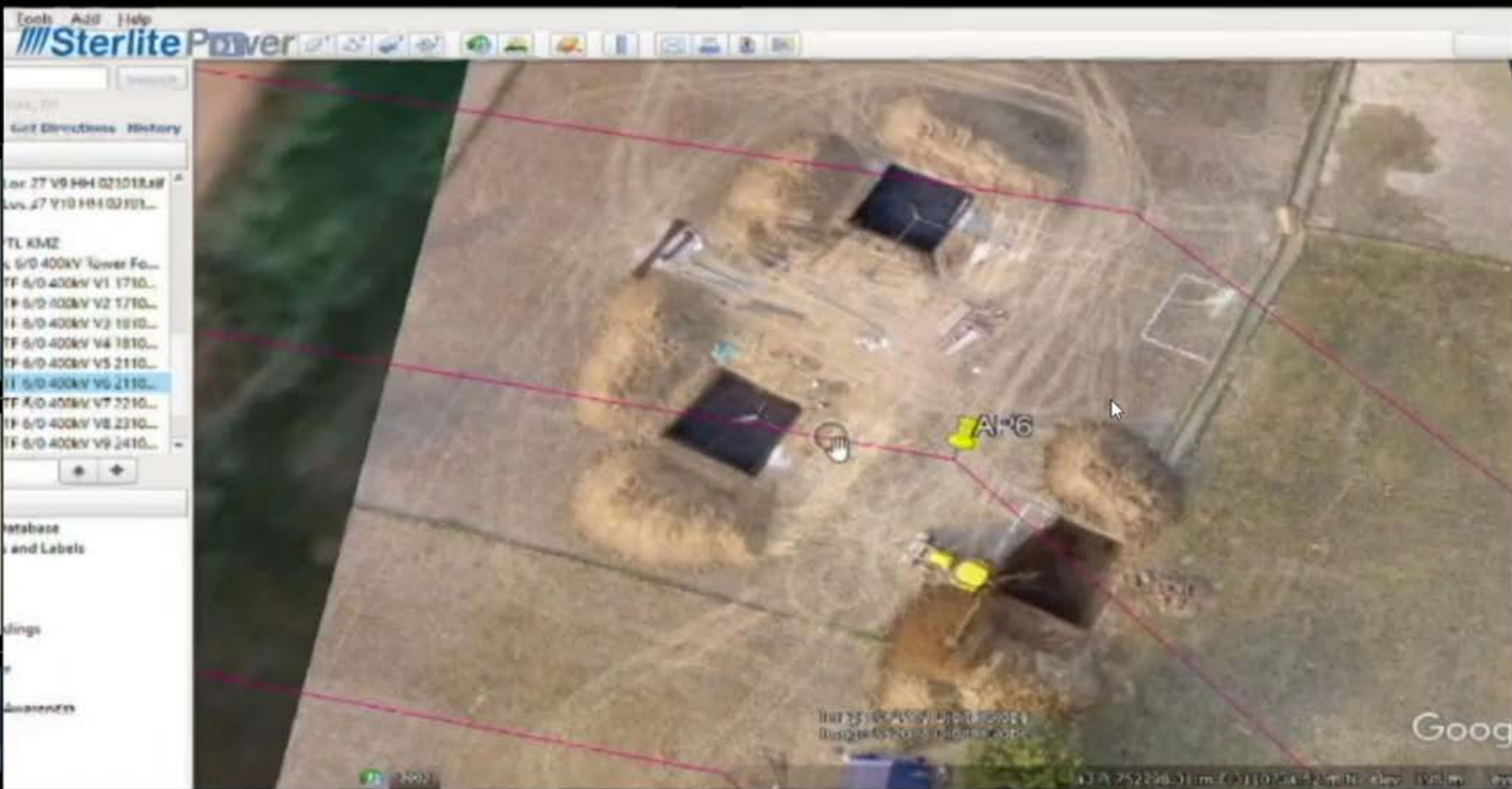
Type here to search

12:20 AM 11/12/2016

A 3D point cloud visualization of a construction site. The terrain is mostly grey and brown, showing a deep excavation or trench. A yellow excavator is visible on the right side of the image. The interface includes various toolbars and a layers panel on the left.

The screenshot displays the Sterlite Power software interface. The top toolbar contains various icons for navigation and editing. The left sidebar features a 'Layers' panel with a list of objects including 'Concave', 'Ray', 'The Points', 'Automatic', 'Point Clouds', 'Point Groups', 'Display Properties', 'Unclassified', 'Disabled', 'Ground', 'Road Surface', 'High Vegetation', 'Building', 'Human Made Object', 'Triangle Meshes', and 'Objects'. The main 3D view area shows a tall, lattice-structured tower being erected in a dense, green forested area. A red banner at the bottom of the interface reads 'Costruction Mapping' and 'Tower Erection'.











Start | Play Book for Heli Operati | Transmission line inspecti | Play Book for Heli Operati | Transmission line inspecti | Transmission line insp x + -

file:///F:/Aviation%20Data/Helicopter%20works/Business%20case%20for%20Aerial%20work/Drone%20usage%20PPT/Transmission%20line%20inspection%20

4 of 15

CLEARANCE ANALYSIS

15.44 m

Clearance 1

Type here to search

ENG IN 11:05 03-05-21

The main content area displays a 3D visualization of a transmission line clearance analysis. The top image shows a perspective view of a transmission line (green) crossing over a forested area (blue/green). A red dot on the line indicates a clearance point, with a label '15.44 m' showing the height. The bottom image shows a top-down view of the same area, with the transmission line and its clearance path highlighted in green and yellow. The interface includes a Windows taskbar at the bottom with various application icons and a search bar.



Start | Play Book for Heli Operati | Transmission line inspecti | Play Book for Heli Operati | Transmission line inspecti | Transmission line insp x + -

file:///F:/Aviation%20Data/Helicopter%20works/Business%20case%20for%20Aerial%20work/Drone%20usage%20PPT/Transmission%20line%20inspection%20

CLEARANCE ANALYSIS

The main visualization is a 3D point cloud of a transmission tower and its associated lines. The tower is colored yellow, while the lines are red. A measurement of 12.02 m is shown between a point on the tower and a point on the line. The background is dark blue. Below the main image is a smaller, partially visible image showing a similar scene with a red line and a yellow tower.

sterlitepower.workplace.com • now ^

Workplace
Corporate QHSE added a photo in
Communications.

Type here to search

ENG IN 11:06 03-05-21



A portrait of a middle-aged man with short dark hair, wearing glasses and a light blue button-down shirt. He is looking slightly downwards and to the left. The background is a plain, light-colored wall.

Sterlite Power



