Agmay
TECHNOLOGIES



SERVICE BROCHURE

Power Line Inspection

Towers, insulators and conductors, inspected by drone while the line stays live

Electrical networks run for thousands of kilometres, and inspecting them on foot or by climbing is slow and hazardous. We inspect transmission lines, towers, substations and distribution feeders by drone, with thermal imaging, high-zoom cameras and LiDAR, while the line stays energised.

- No outage needed
- 640×512 radiometric thermal
- Up to 765 kV
- Tower-by-tower defect register

OVERVIEW

See every fitting without climbing a tower

A drone flies each span at a safe stand-off distance and photographs every tower, insulator string and fitting in thermal and high zoom. Nothing has to be switched off and no one has to climb.

Each defect is graded by severity, tagged to its tower and placed in a register your maintenance team can work from, with a photo as evidence.

765 kV	640×512	70 %
Corridors inspected up to this voltage class	Radiometric thermal resolution	Less inspection time on a 20 km line

Why Agmay

- ✓ Inspections flown without interrupting supply, at the required clearance distances
- ✓ High-zoom imagery shows cracked insulators, corrosion, missing hardware and bird nests
- ✓ Coverage from low-voltage feeders to 400 kV and 765 kV corridors
- ✓ Radiometric thermal imaging finds hot connectors, overloaded conductors and failing insulators
- ✓ LiDAR corridor surveys measure conductor sag and vegetation encroachment
- ✓ DGCA-certified pilots, with airspace checked on Digital Sky before every flight

DRONE OR PATROL

Manual patrol compared with drone inspection

	Drone inspection	Foot patrol and climbing
Line outage	Not required	Often required for climbing
Crew exposure	Pilot on the ground at safe clearance	Linemen on live or isolated towers
Evidence	Geo-tagged thermal and zoom images of every fitting	Handwritten patrol notes
Vegetation clearance	Measured from a LiDAR point cloud	Estimated by eye

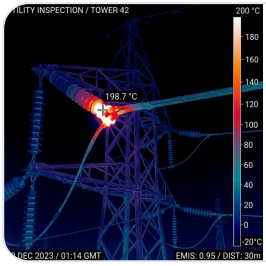
WHAT WE INSPECT

Four ways to look at a line



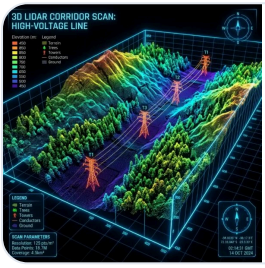
Transmission line inspection

EHV, HV and MV corridors: towers, insulator strings, conductors and fittings.



Thermal hotspot detection

Temperature differences at joints and clamps flagged before they fail.



LiDAR corridor survey

Point clouds of the line, terrain and trees for sag and clearance analysis.



GIS asset dashboard

Findings mapped tower by tower for the maintenance team.

HOW IT WORKS

From mission plan to maintenance plan

1

Mission plan

Line route, voltage class, towers and access points are loaded and a safe stand-off distance is set.

2

Permissions

Airspace and utility permissions are arranged before the crew mobilises.

3

Capture

The crew flies each span with thermal, zoom and, where specified, LiDAR sensors.

4

Defect analysis

Images are screened and each defect is classified by type and severity and tagged to its tower.

5

Maintenance plan

You receive a prioritised defect register, GIS layers and images for the work crews.

DELIVERABLES

What you receive

- ✓ Tower-by-tower defect register with GPS positions and severity
- ✓ Annotated thermal and high-zoom images
- ✓ LiDAR point cloud with sag and vegetation-clearance report
- ✓ GIS layers or dashboard for asset management

Aircraft and sensors

DJI Matrice 4T	640×512 thermal camera (30 Hz) with temperature measurement; three 48 MP cameras with up to 112× hybrid zoom; 1,800 m laser rangefinder
DJI Matrice 400	Zoom and LiDAR payloads, including the Zenmuse L3, for long sorties and corridor mapping
Agmay AeroVTOL-X	Fixed-wing VTOL for long corridors
Agmay FPV 10″	For close work around structures

CASE STUDY · TELANGANA, OCTOBER 2026

25 transmission towers inspected in one day

25
towers on three lines, flown in one day

7,630
RGB and thermal images captured

129
findings, each with an annotated photo

5
urgent repairs, due within a month



A tower beside the four-lane highway, with paddy fields on both sides.

The brief

A detailed condition survey of three double-circuit lines, about 6 km in all: cracked insulators, hotspots, loose or missing bolts and nuts, structural deviation, solar panels and other attachments.

Crossarm tips, earthwire peaks and insulator fittings sit high above fields, a highway and a railway, where they are hard to judge from the ground. The flights used a DJI Matrice 4T with wide, zoom and thermal cameras.

METHOD

From 7,630 images to a repair plan

1

Fly

5 flights · 131 minutes

Wide, zoom and radiometric thermal cameras captured 3,815 paired views over 11.6 km of flight track. Median detail was 3.8 mm per pixel.

2

Screen

7,630 images, all geotagged

Software scored sharpness and exposure, converted every thermal frame to apparent temperature and located each tower from laser-rangefinder data.

3

Review

2,225 photos reviewed

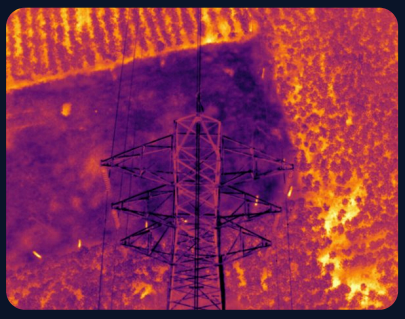
Every sharp photo was reviewed in two passes. A coverage audit found 771 frames the first pass had not shown, which added 26 findings.

4

Grade and report

129 findings

Each finding got a severity, a repair deadline, an annotated photo, a description, an action and a location.



THERMAL

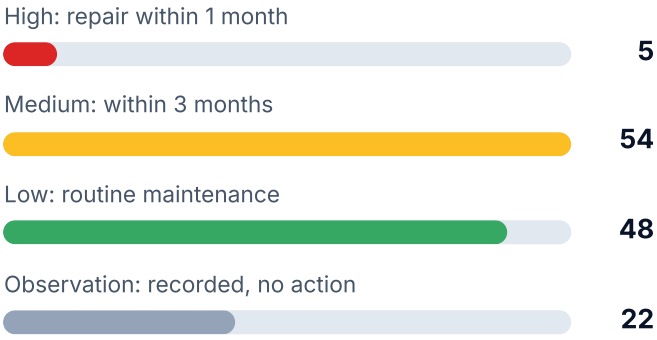
No hotspot on any line component

All 3,815 radiometric frames were converted to apparent temperature and searched for local heating. Every strong peak traced back to something other than the line: the hottest was a motorcycle on the highway at 97 °C. A night re-scan under known load was recommended.

CASE STUDY · FINDINGS

129 findings, none critical, five urgent

Findings by severity



Repair within a month

- **Detached crossarm brace.** One end hung free with its bolt missing.
- **Missing bolt on an earthwire peak cap.** One of four bolts was gone.
- **Bird nest above an insulator string.** Nest material can cause a flashover.
- **Probable missing bolt on a splice plate.** Flagged for confirmation on site.
- **Third-party wiring lashed to a tower leg.** It ran to a low-voltage pole and may be live.

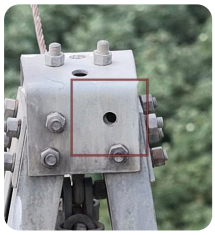
EVIDENCE

Every finding comes with a photo



HIGH

Detached bracing member



HIGH

Missing bolt on a peak cap



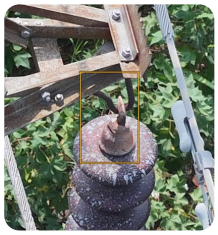
HIGH

Bird nest above an insulator



MEDIUM

Solar panel on the tower



MEDIUM

Rusted hanger hook



OBSERVATION

Crack-like marks ruled out

MAINTENANCE PLAN

A deadline for every finding

WITHIN 1 MONTH

5 repairs

Refit the brace, fit the missing bolts, remove the nest and make the third-party wiring safe.

WITHIN 3 MONTHS

54 items

Earthwire corrosion check, rust treatment, insulator washing, base clearing and tree trimming.

ROUTINE

48 items

Litter, drainage and minor rust on normal patrols, plus 22 observations for reference.

FOLLOW-UP

Further checks

A night thermal scan under known load and a daylight re-flight of the towers flown at dusk.

Figures are from the inspection report for the survey of 14 October 2026. The client's name, line names and tower positions are withheld. Full case study: agmay.in/case-studies/transmission-line-drone-inspection-telangana/

QUESTIONS

Common questions

Can you inspect without interrupting the power supply?

Yes. Inspections are flown while the line is energised. We keep the required safety clearance and follow the utility's and CEA safety requirements.

Which voltage levels do you inspect?

Low, medium, high and extra-high voltage networks, including 400 kV and 765 kV corridors.

Do you provide thermal inspection?

Yes, with 640 × 512 radiometric thermal cameras that identify connector hotspots, overloaded lines and heating defects.

Do you work outside Telangana?

Yes. Crews are mobilised from Hyderabad to projects across India.

WHAT WE CHECK ON EVERY TOWER

Insulators
Cracks, bird fouling and rust on hooks and caps

Tower steel
Detached members, rust and structural deviation

Bolts, hangers and fittings
Loose or missing bolts and nuts, corroded hooks

Earthwire and conductors
Corrosion along the span, hotspots at joints and clamps

Bases and foundations
Vegetation hiding the foundations, drainage and litter

Right-of-way and crossings
Trees under the conductors and lines running beneath

Third-party attachments
Solar panels, wiring and other fittings on the tower

Safety fittings
The condition of the safety fittings on each tower

Bird nests
Nests above insulator strings that risk a flashover

How do I get a quotation?

Send us these and we reply with a scope and a price.

- ✓ The line or network, and its length
- ✓ Voltage class and number of towers
- ✓ Thermal, zoom or LiDAR, or all three
- ✓ Your timeline

Plan your line inspection with Agmay

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