Agmay
TECHNOLOGIES



SERVICE BROCHURE

Solar Panel Inspection and Cleaning

Find every faulty module, then clean only where it is needed

Thermal and visual inspection for utility-scale solar farms and commercial rooftops, with every defect located on a map. The same data guides drone cleaning, so water and effort go only where panels are soiled.

- Thermal and visual
- GPS-tagged defects
- Up to 70% less water
- Report in 24–48 h

OVERVIEW

See the faults the eye cannot

A drone flies planned lines over the plant and captures every module in visible light and in thermal infrared. Faulty cells and strings run hotter than their neighbours, so they stand out in the thermal image.

Each defect is located by GPS and graded by type and severity. The same survey shows which rows are soiled, so cleaning goes only where it is needed.

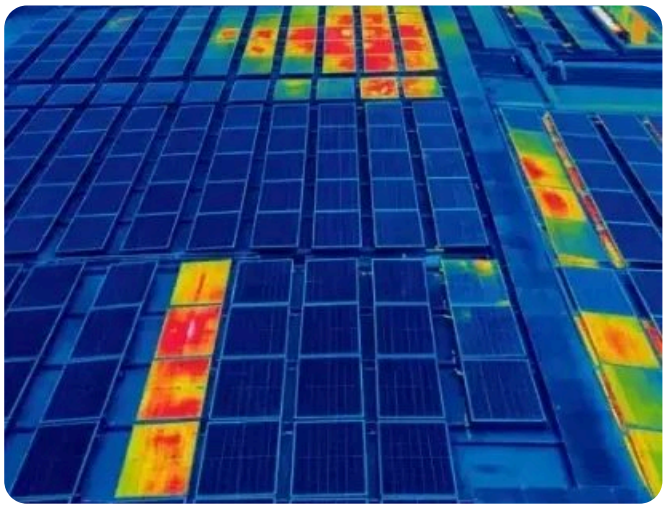
up to **90 %**	up to **70 %**	**24–48 h**
Faster than manual inspection	Less water when cleaning	Report turnaround

Why Agmay

- ✓ Thousands of modules inspected in a single flight while the plant keeps generating
- ✓ Visual imaging finds cracked glass, soiling, vegetation and bird droppings
- ✓ Cleaning by dry brush, soft brush or low-pressure water mist to suit the module
- ✓ Thermal imaging finds hotspots, failed bypass diodes, string faults and PID
- ✓ Every defect is GPS-tagged so technicians walk straight to the module
- ✓ DGCA-certified pilots, with airspace checked on Digital Sky before every flight



VISIBLE LIGHT

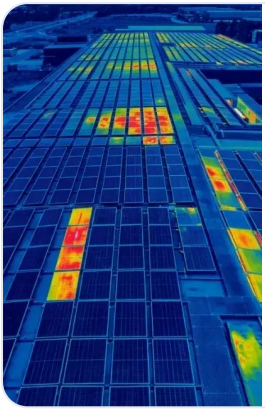


THERMAL INFRARED

Illustrative comparison: faults that are invisible to the eye show up as hot patches in the thermal image.

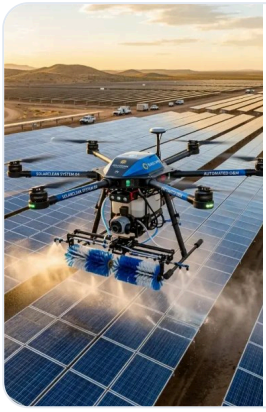
INSPECTION

One survey, four uses



Thermal inspection

Infrared thermography of every string and module.



Panel cleaning

Dust, sand and droppings removed without foot traffic on modules.



Plant mapping

An orthomosaic and digital twin of the array for asset records.



Rooftop plants

Factories, warehouses, campuses and hospitals inspected without roof access.

WHAT THE SURVEY FINDS

Two cameras, two kinds of fault

THERMAL INFRARED

Electrical faults

- Hotspots in cells and modules
- Failed bypass diodes
- String faults
- Potential-induced degradation (PID)

VISIBLE LIGHT

Physical damage and soiling

- Cracked glass
- Soiling and dust
- Vegetation shading the rows
- Bird droppings

PLANTS WE INSPECT

Utility-scale solar farms

Ground-mounted plants inspected string by string while they keep generating.

Commercial and industrial roofs

Malls, warehouses, factories, campuses and hospitals, without anyone on the roof.

Watch our drone inspection of solar panels in Karnataka: youtube.com/watch?v=ilvcQkF2vR0

CLEANING

Clean panels without crews on the modules



Dust, sand and bird droppings cut a plant's output. Drone cleaning removes them row by row, with no one walking on the modules or working at height.

Because the inspection has already mapped where the soiling is, the drone cleans only the rows that need it, which saves water and time.

Three cleaning methods, chosen for your modules

Dry brush

For dust and sand where water is scarce or not wanted.

Soft brush

For more stubborn soiling, gentle on the module glass.

Low-pressure water mist

For droppings and caked dirt, using far less water.

The method is chosen for your panel type and the manufacturer's specification.

DRONE OR MANUAL

Drone cleaning compared with manual cleaning

	Drone cleaning	Manual cleaning
Water consumption	Up to 70% less	High
People on roofs or panels	None	Crews at height
Speed	Thousands of panels a day	Slow, row by row
Records	Digital report with before and after imagery	Paper-based

HOW IT WORKS

From site assessment to verified result

1

Site assessment

Plant layout, string map and soiling conditions are reviewed.

2

Inspect

RGB and thermal imagery of every panel is captured in planned flight lines.

3

Analyse

Hotspots, faults and heavily soiled modules are identified and mapped.

4

Clean

Cleaning is carried out where it is needed, by the method suited to the module.

5

Verify and report

A repeat scan confirms the result and a report sets out findings and recommendations.

DELIVERABLES

What you receive

- RGB and thermal imagery with an orthomosaic of the plant
- GPS-tagged defect report by type and severity
- Cleaning report with before and after imagery
- Maintenance recommendations for the O&M team

Aircraft and equipment

DJI Matrice 4T	640×512 thermal camera (30 Hz) with temperature measurement; wide, medium tele and telephoto 48 MP cameras
Agmay HydroClean-300	Tethered cleaning platform, with water and power supplied from a ground station
DJI Matrice 400	Heavy enterprise drone for long sorties and interchangeable payloads

TIMING

How often to inspect and clean

Inspection

Every 6 to 12 months is typical, with extra inspections after hail, storms, lightning or unexplained drops in output.

Cleaning

Depends on dust, pollution, rainfall and vegetation. Many utility-scale plants clean every few weeks or months; inspection data helps set the right interval.

QUESTIONS

Common questions

Do inspections interrupt generation?

No. Inspection is non-contact and is flown while the plant operates. Cleaning works row by row with minimal disruption.

Will cleaning damage the panels?

No. The method (dry brush, soft brush or water-assisted) is chosen for your panel type and the manufacturer's specification.

Can drones clean rooftop solar panels?

Yes, where operating conditions allow, including commercial and industrial roofs such as malls, warehouses, factories and hospitals.

What do I receive after an inspection?

Thermal and RGB imagery, an orthomosaic of the plant, and a GPS-tagged defect report by type and severity, usually within 24 to 48 hours.

How do I get a quotation?

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

- ✓ Plant location and capacity
- ✓ Ground-mounted or rooftop
- ✓ Inspection, cleaning or both
- ✓ Your timeline

Plan your solar inspection with Agmay

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