



# BIG DATA AND PREDICTIVE ANALYTICS

The future of solar O&M, p.17

## MARKET WATCH

The twists and turns of China's solar policy, p.41



## DESIGN AND BUILD

Hurricane-resilient PV systems, p.74

## PLANT PERFORMANCE

Boosting power through retrofit coatings, p.88



## STORAGE & SMART POWER

Why battery performance testing is crucial, p.96



# Going above and beyond

Aerial inspections heighten technical due diligence and provide valuable results in record time.

Above and PI Berlin worked together on a high-profile secondary market transaction of a 13MW solar asset in Italy. Technical advisors PI Berlin led the technical due diligence of the asset transaction. Above were commissioned to carry out thermographic and high-resolution visual inspections as part of the project's technical scope. An exhaustive analysis of module health was key due to the direct impact on the purchase price. It is worth noting that the plant was installed at a time when the module price represented more than 50% of the CAPEX. The on-site inspection and subsequent image analysis were framed within a technical due diligence process, conducted by the seller in order to establish the status of the plant before entering negotiations with potential buyers.

*"Above were able to adapt to our needs in record time, creating robust solutions that had not been previously used in large scale PV plants."*

## Advanced aerial inspections

Above began with a thermographic inspection, collecting thermal and RGB imagery of all 57,000 modules. Using a patented methodology, Above successfully identified and located anomalies on 2,820 modules across the site. The interactive report produced by Above provided clear,



Drone inspecting modules on the undulating terrains of western Italy.

actionable data, allowing ground engineers to locate the problems quickly and carry out further tests. During the ground-based visual inspection, engineers identified many other issues such as bus bar corrosion, yellowing, snail trails and glass cracks, not visible through thermography.



Module showing snail trails

This prompted the need to quantify the extent of these defects across the entire site. PI Berlin estimated it would take 56

working days to inspect the whole site using a ground-based approach: a labour-intensive task, at risk of suffering from inconsistency. Using a drone-mounted high-resolution visual camera, Above were able to complete the data collection in 4.5 days, more than 10 times faster than conventional methods. An industry first.

## Cutting edge technology

The adoption of aerial inspections as a more efficient alternative to manual inspections is allowing companies to work smarter.

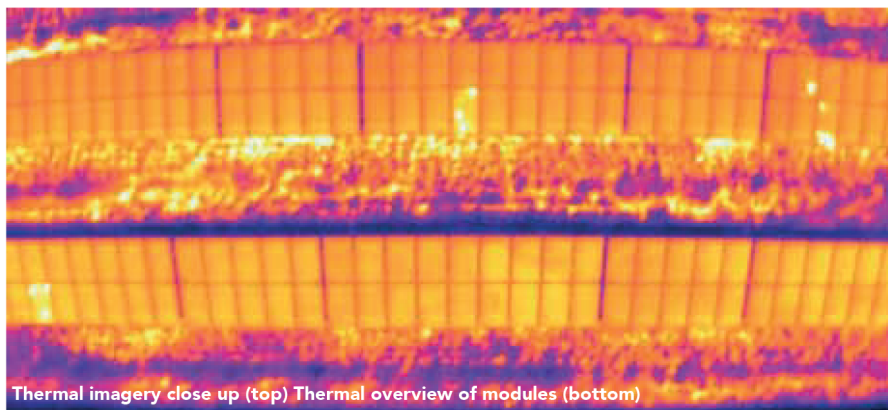
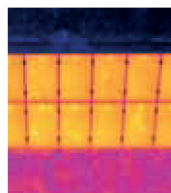
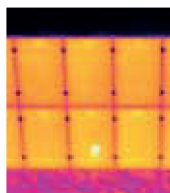
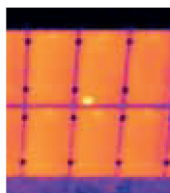
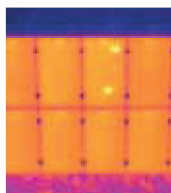


Asier Ukar, Senior Consultant at PI Berlin on the project outcome,

*"Above were able to adapt to our needs in record time, creating robust solutions that had not been previously used in large scale PV plants. We were especially surprised by the highly user-friendly platform created by Above for the evaluation of more 300 GB of imagery taken during the aerial visual inspection."*



Will Hitchcock, CEO of Above says, "This was a great project for us to demonstrate the potential of drones in solar, beyond thermography. Prior to starting the project, there were several technical concepts that needed to be proved. And with very tight timescales, vision, fast decision making, and agility were vital."



Thermal imagery close up (top) Thermal overview of modules (bottom)

# SolarGain Inspection Hub making the invisible

Above's new SaaS platform, SolarGain Inspection Hub, integrates data from multiple sources into a unified program – including Thermal inspections, High-Resolution inspections, Eyesite mobile app inspections and other third-party testing activities such as I-V curves and EL images. Seamlessly access, share, filter and compare inspection reports, data and imagery. Utilise the platform's powerful tools to transform your data into actionable insights. Inspection Hub maintains a lasting record of your existing assets and works alongside you as your portfolio expands.



## Features

- Portfolio Health
- Inspection Compare
- Maintenance Tracking
- Warranty Claim
- Anomaly List View
- Anomaly Map View
- Report Overview
- Filter Anomaly Tool
- Infrastructure Hierarchy

