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Zeitview

1 October 2024

11:00 am – 12:00 pm | EDT, New York City

4:00 pm – 5:00 pm | BST, London

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pv magazine
webinars

How inspection feedback loops improve utility solar at all stages



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Welcome!

Do you have any questions?  

Send them in via the Q&A tab.  We aim to answer as many as we can today!

You can also let us know of any tech problems there.

We are recording this webinar today. 

We'll let you know by email where to find it and the slide deck, so you can re-watch it at your convenience.  



How inspection feedback loops improve utility solar at all stages



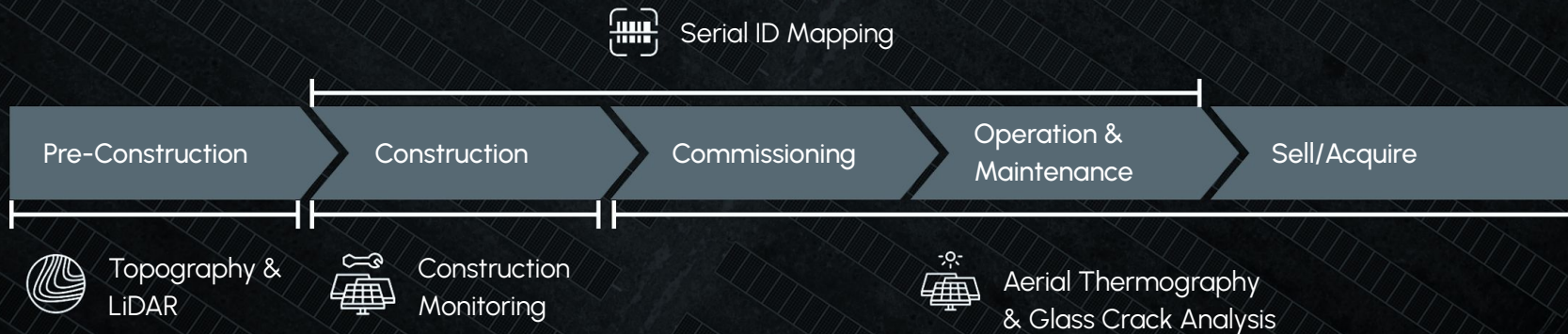


Zeitview: Advanced Inspection Solutions for Solar

Solutions for the Asset's Life Cycle

Zeitview Solar Insights delivers advanced inspection software and services for developers, owners, and operators that accurately and cost effectively analyze solar assets.

- Ensuring long term viability and profitability of projects
- Early identification of issues and risk factors
- Predictability of future performance



Zeitview by the Numbers

We are the market leader for solar PV aerial inspections and lifecycle analysis

11,000+

Contracted inspections to date

80,000+

Pilots in Network

400GW

Of installed PV capacity scanned to date*

\$62M+

Recoverable energy loss detected per year >1% mean DC power loss/site

200MW

With our piloted aircraft, we can scan up to 300MW/hour

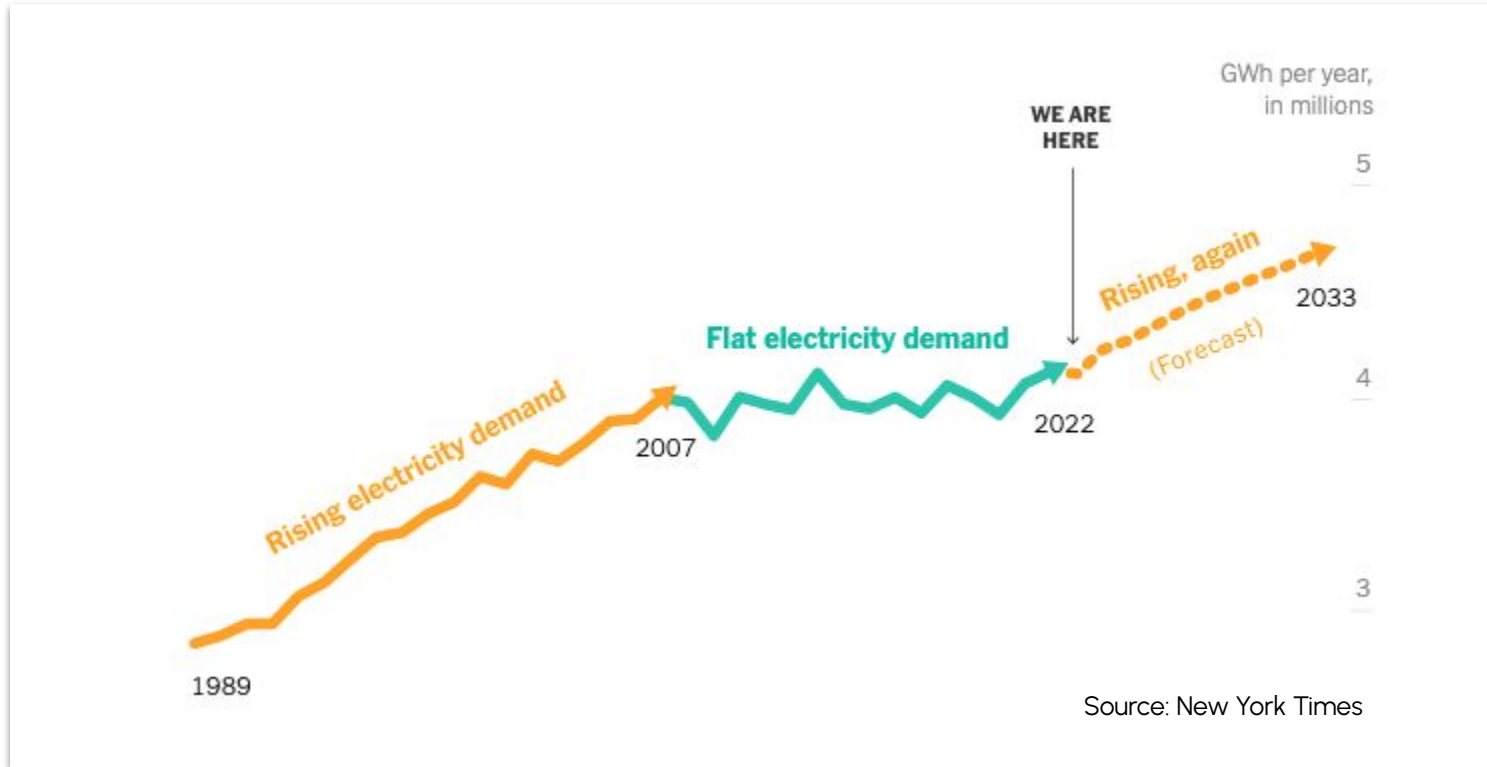
70+

Countries Serviced

Zeitview also Supports:

- Wind
- Property & Facility MGMT
- Telecom
- Utilities

The Global Energy Demand Requires Improved Performance



How can you improve what you can't see?

This is the challenge at the forefront of the global solar market. With many asking:

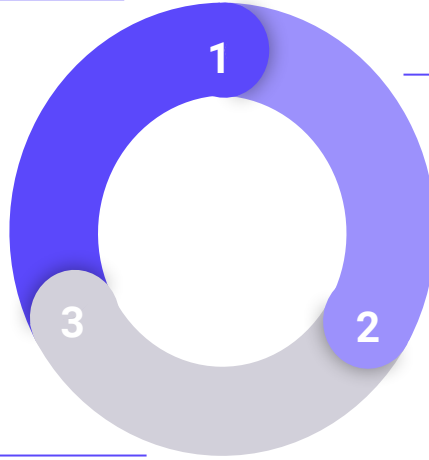
- What are the conditions of my assets?
- Where are my biggest and most expensive issues?
- How do I reduce truck rolls and plan human power efficiently while improving asset performance?

How do I grow to meet demand with more work and fewer people

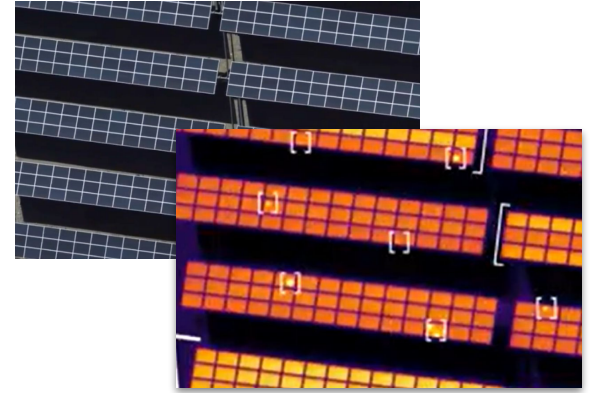


The Inspection Feedback Loop

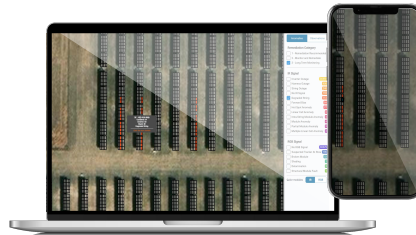
Inspect



Analyze



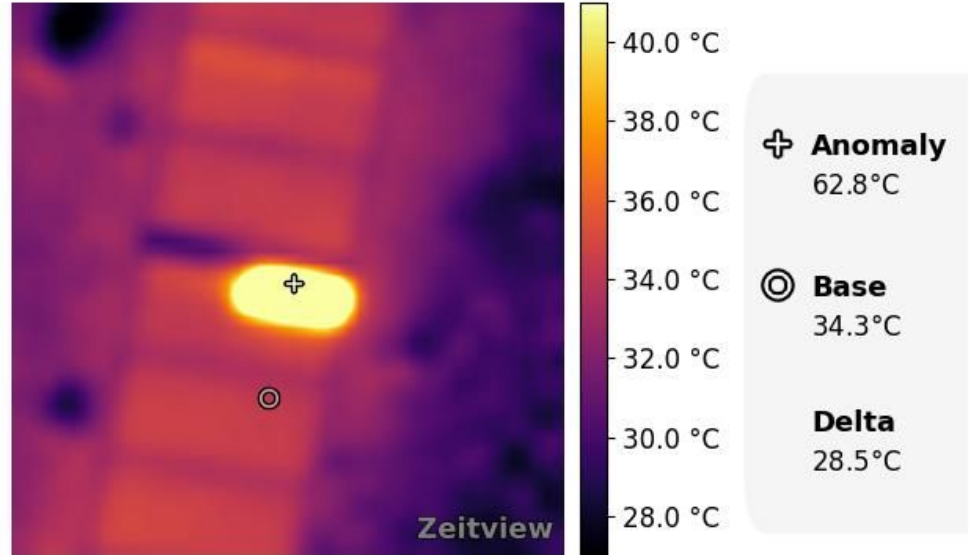
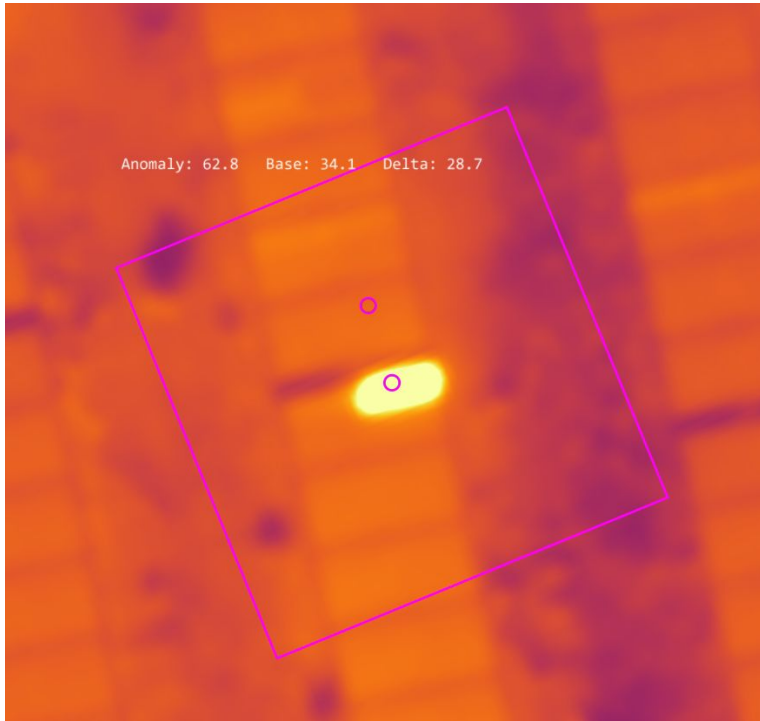
Act



An aerial photograph of a large-scale solar farm. The solar panels are arranged in neat, parallel rows across rolling green hills. The scene is captured during the "golden hour" of sunset, with a warm, golden light illuminating the landscape and casting long, soft shadows. In the background, there are more hills and a faint industrial skyline under a clear sky. A dirt road and a concrete path are visible in the foreground, winding through the solar farm.

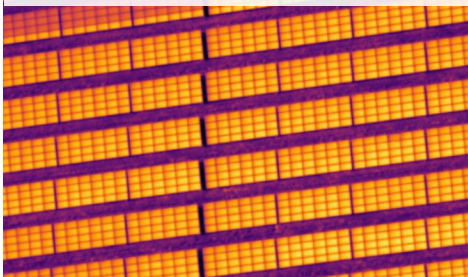
Panel Discussion

figures of critical hot spots? high temperature half submodule anomalies?

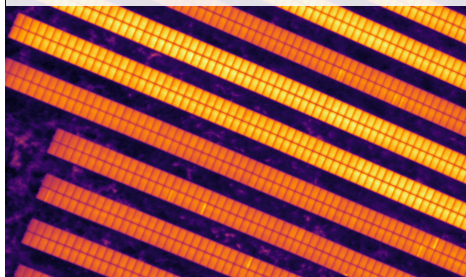


Thermal Anomaly Examples

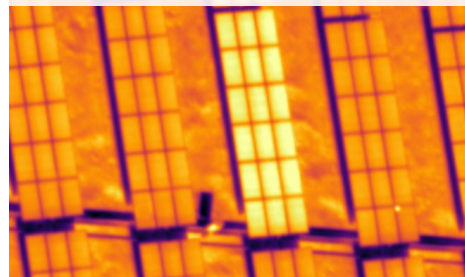
Inverter Outage



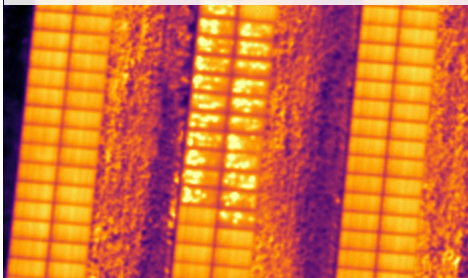
Combiner Outage



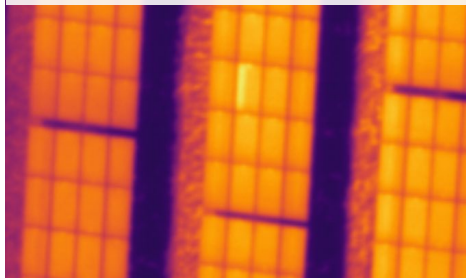
String Outage



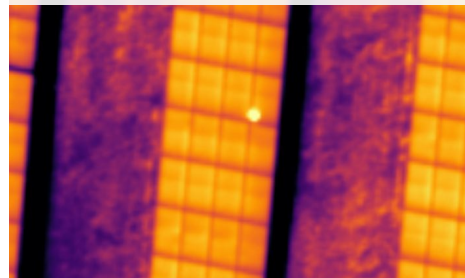
Short Circuit

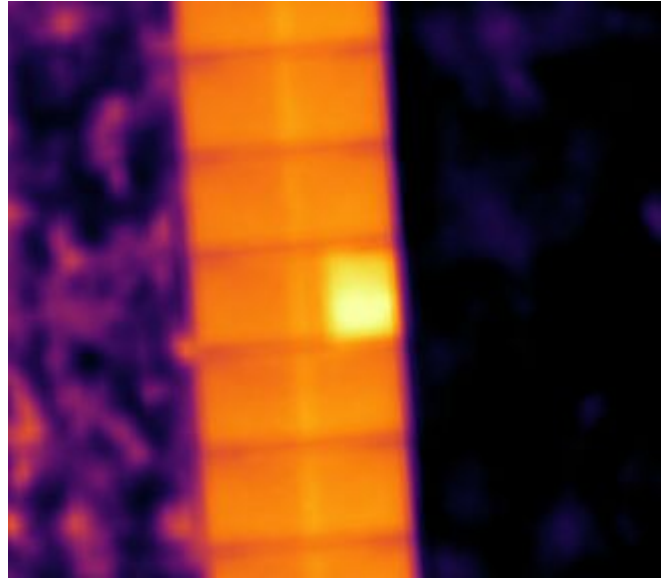
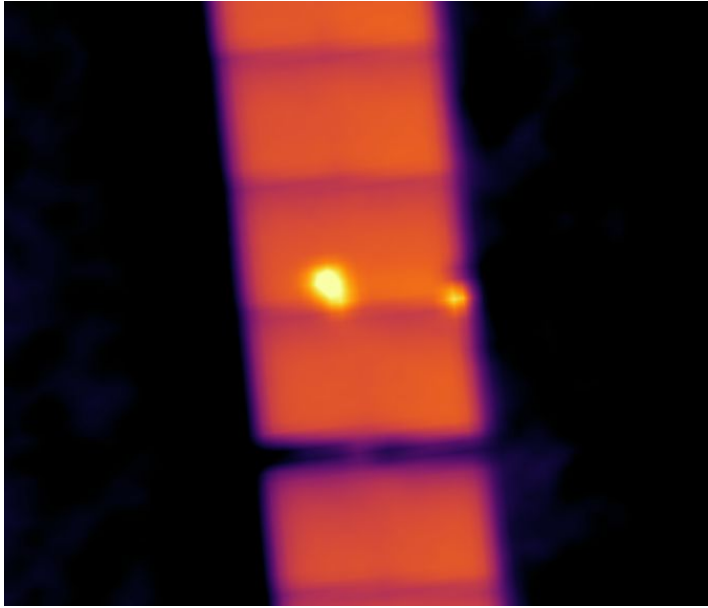


Sub-module Anomaly



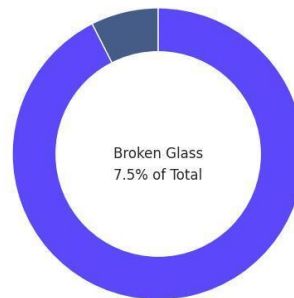
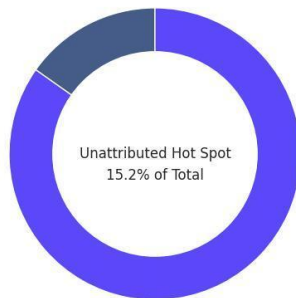
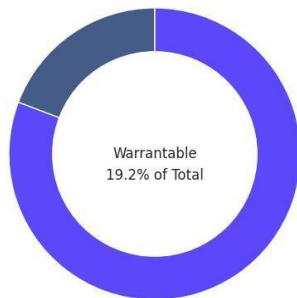
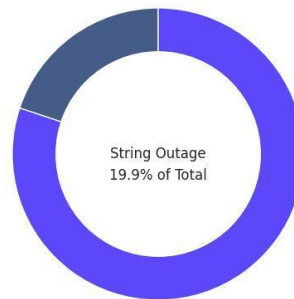
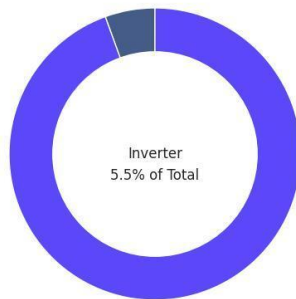
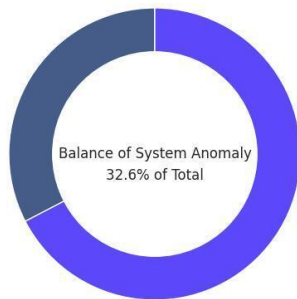
Hot Spot





Anomalies and Analytics across 165 GW of Thermal Data

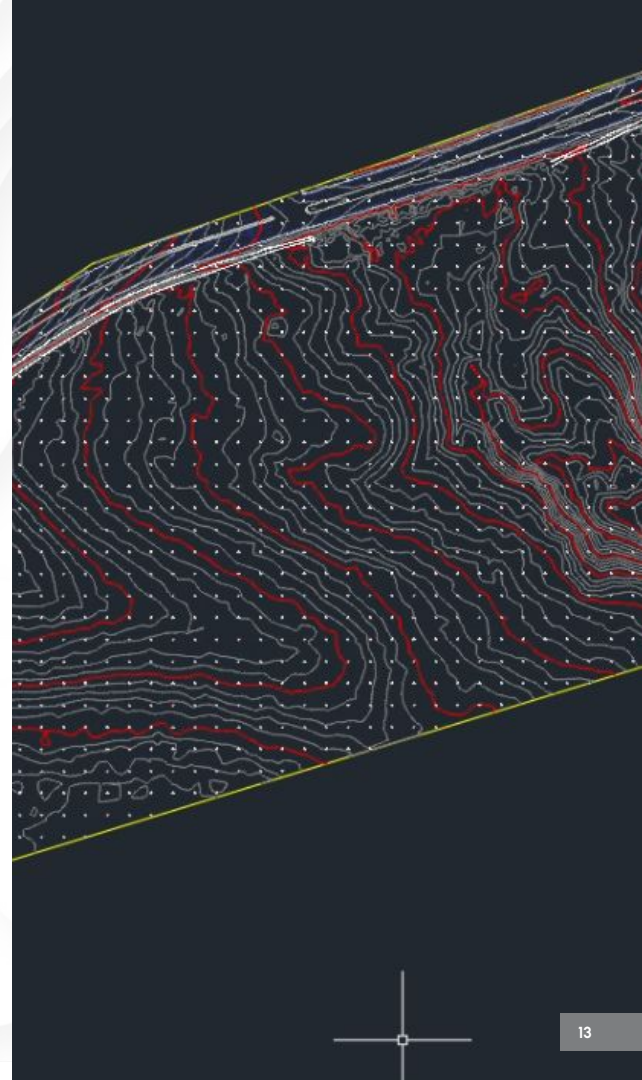
Average Percentage Power Loss by Anomaly Type (2023)



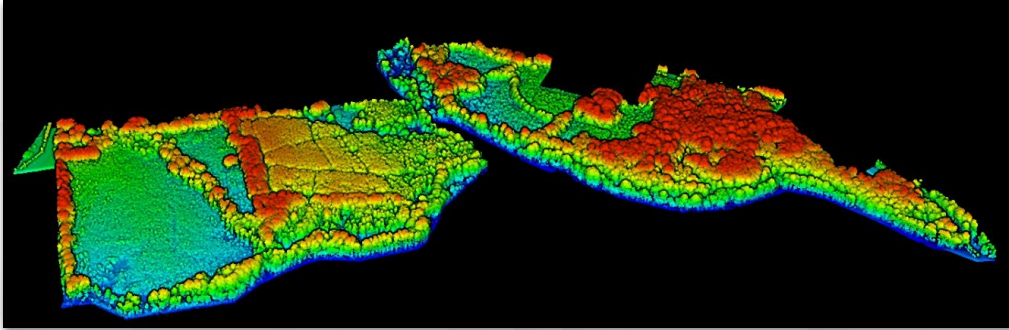
Remote Sensing for Improved Understanding of Hydrology

Data that enhances the efficiency, accuracy, and cost-effectiveness of each project compared to traditional and current topographic survey methods.

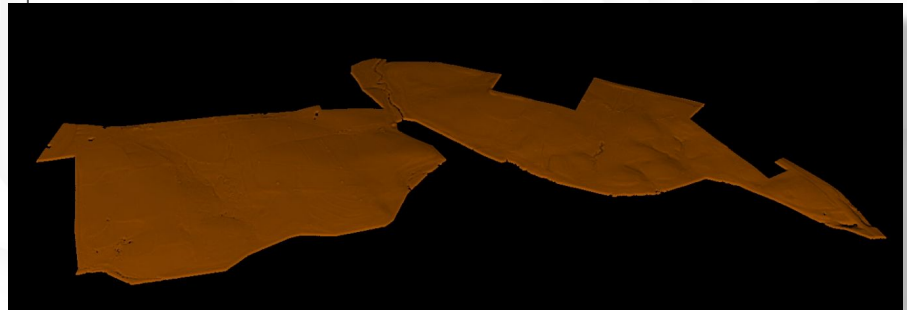
	Traditional Surveys	Zeitview Hydrology
Time	Weeks to Months	Days
Cost	High Cost	Low Cost
Field Teams	Requires multiple field teams for potentially weeks or months	Small teams for all sizes of projects due to automated capture
Hazard/Difficulty	Difficult undeveloped terrain is highly hazardous	Aircraft make it easy to inspect large swaths of area from a distance safely
Precision/Accuracy	1 point every 50ft	50 points/1 sq ft



All Points

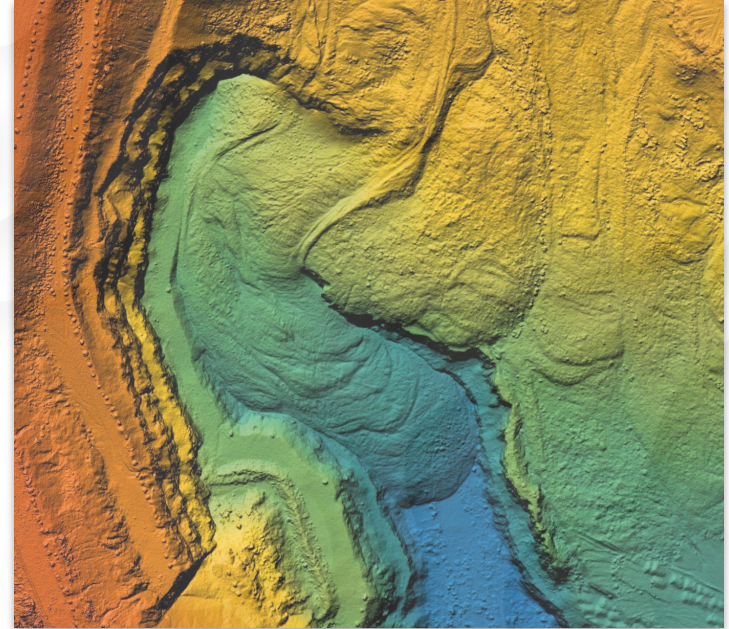


Ground Only



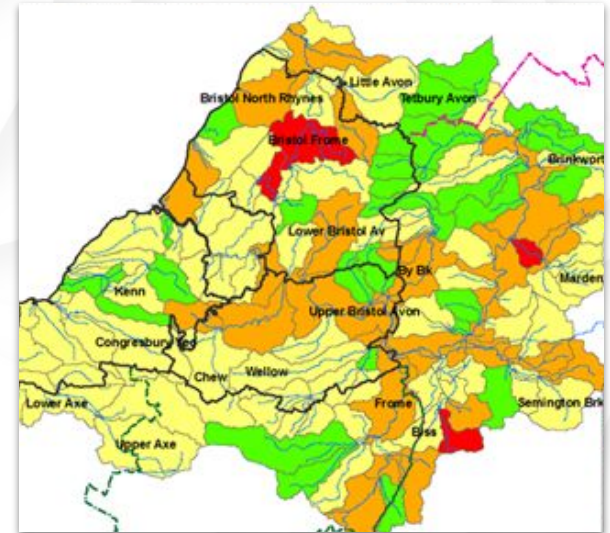
DEMs provided by Zeitview bring invaluable advantages to hydrology analyses:

- High-resolution, georeferenced elevation data provides a detailed, accurate representation of the project site, facilitating precise planning and design at scale
- Allows for the identification of low points, optimal drainage placement, and precise flow measurements
- Captures intricate site details that not only enhances design precision but also expedites project timelines, reducing overall costs and increasing revenue turnover
- Proven to be a versatile tool for optimizing performance and minimizing uncertainties/ mitigating risks with engineering and design

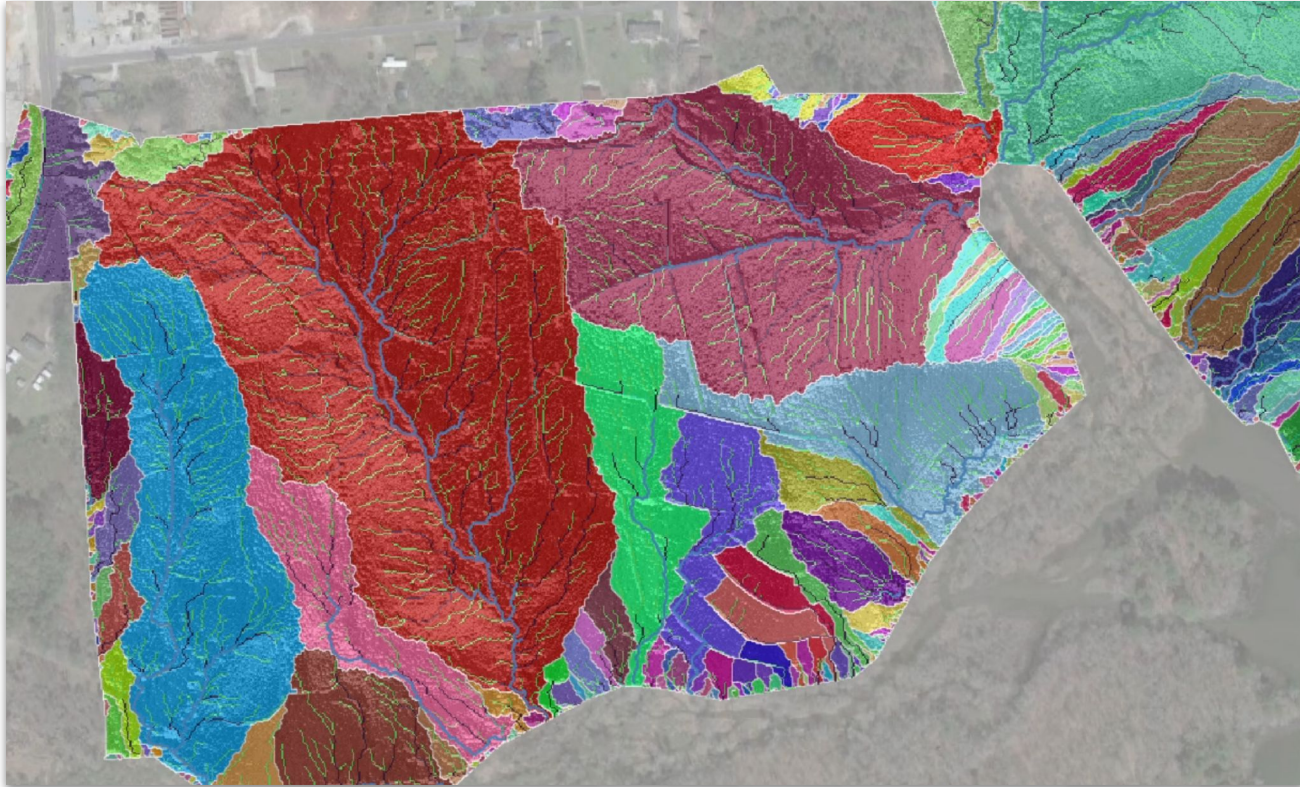


Understanding how water flows on the project site:

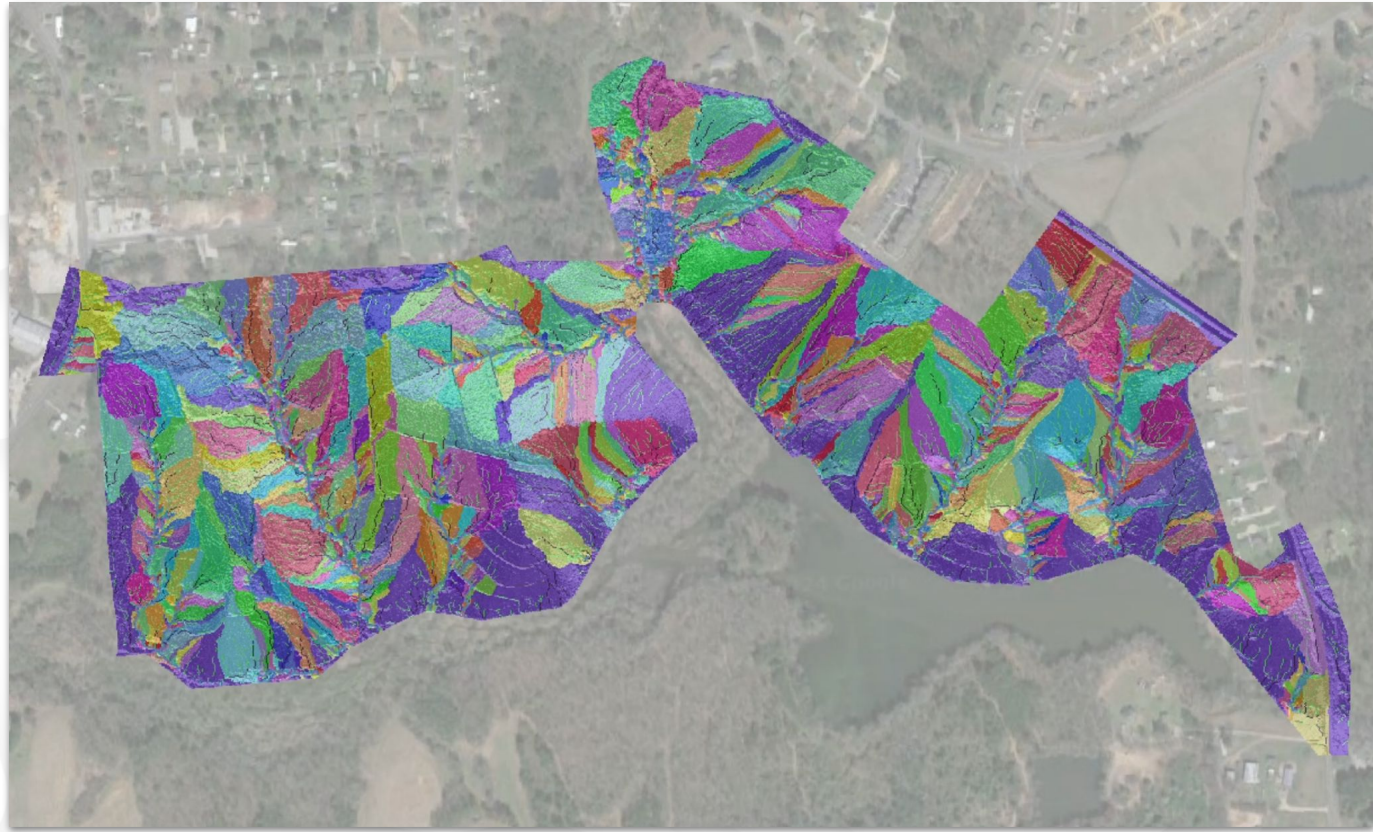
- High-resolution, georeferenced watershed data provides a detailed, accurate representation of how the water flows on the project site, facilitating precise planning and design at scale
- Identifies major and minor catchments
- Captures intricate site details that not only enhances design precision but also expedites project timelines, reducing overall costs
- Proven to be a versatile tool for optimizing performance and minimizing uncertainties/ mitigating risks with engineering and design



Rivers and Major Catchments

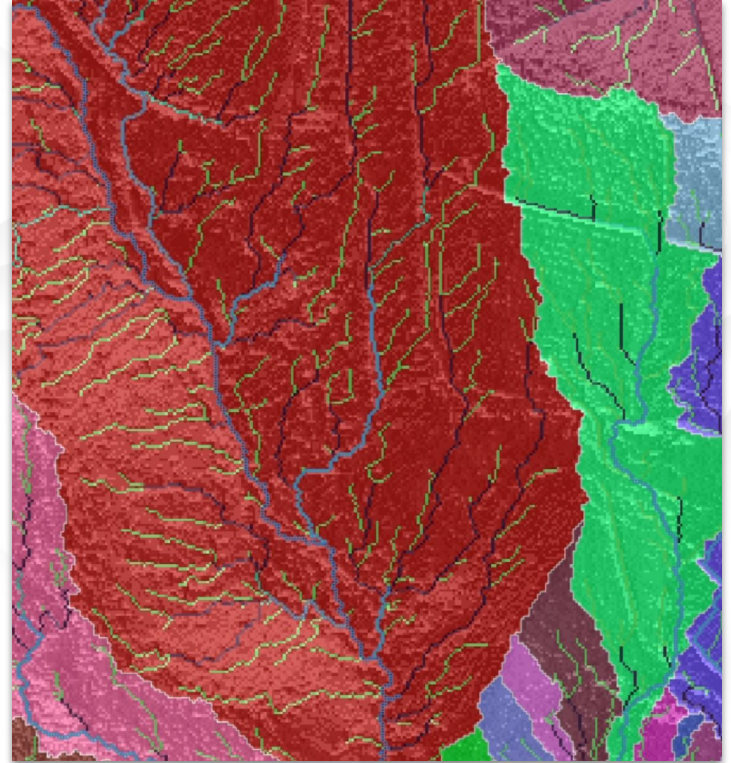


Minor Catchments/Watersheds



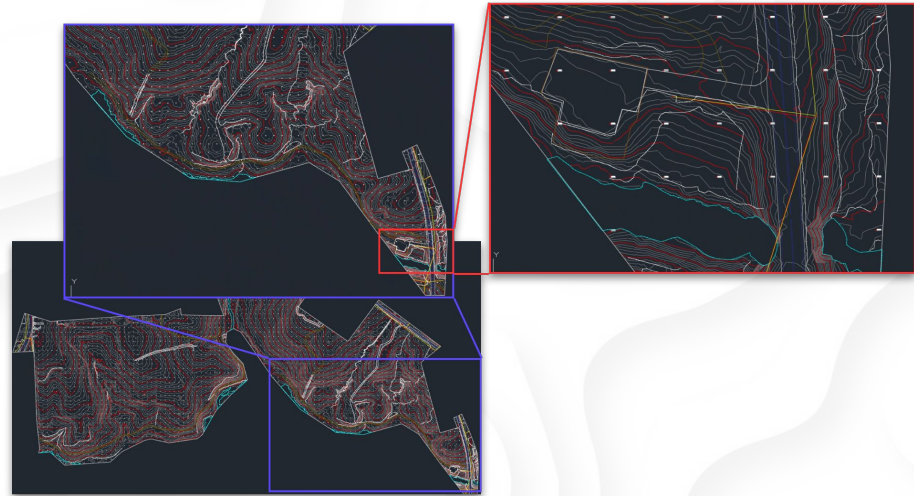
Understanding how water flows on the project site:

- Watershed flow data provides a detailed, accurate representation of where the water flows on the project site, facilitating precise planning and design for drainage
- Identifies major and minor areas of flow and where water will ultimately pool
- Captures intricate hydrological details that allows for informed decision making which expedites project timelines and reduces the overall costs by minimizing uncertainties/ mitigating risks with drainage engineering and design



Incorporating CAD drawings from Zeitview into hydrological analyses processes offers multifaceted benefits:

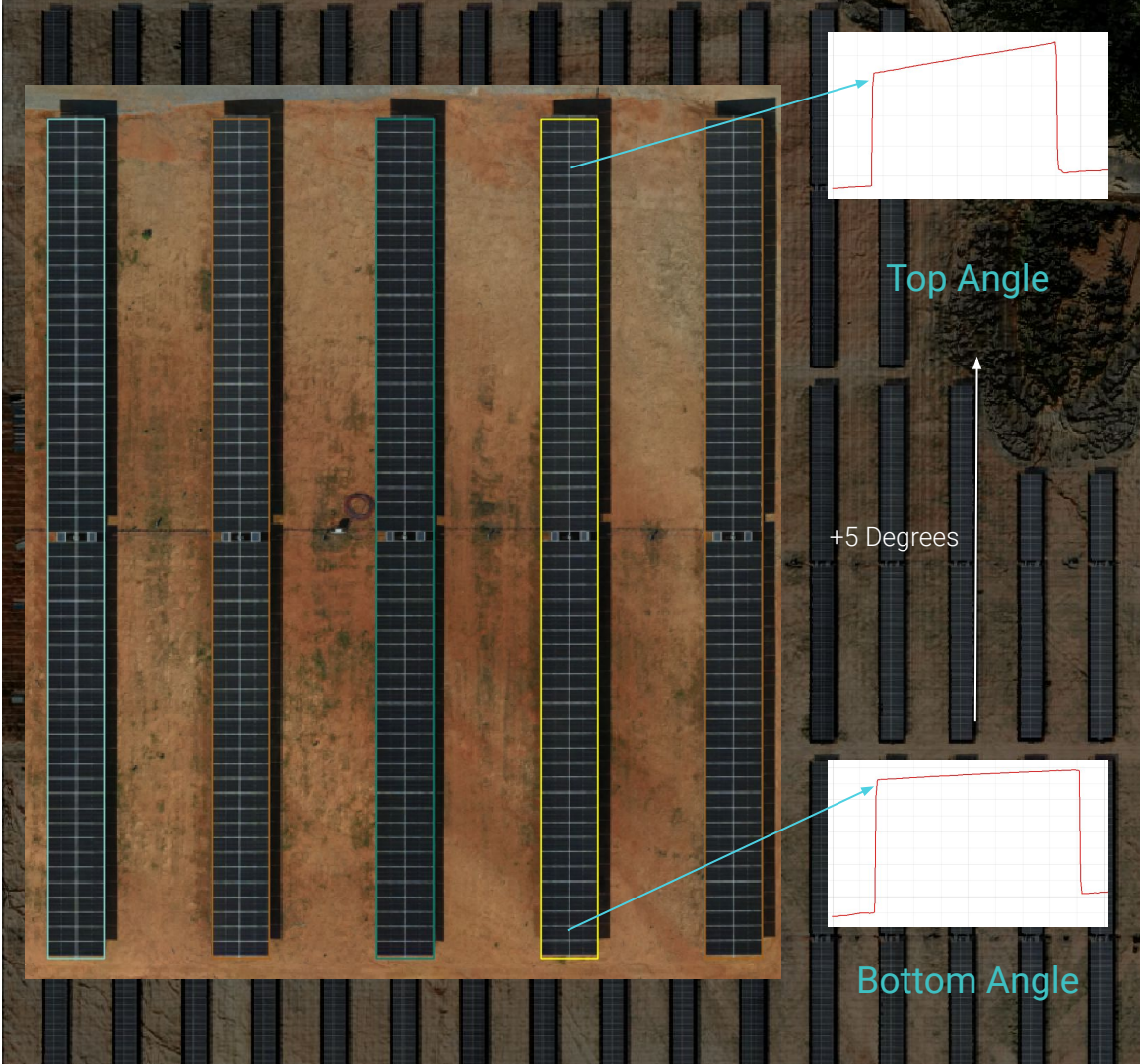
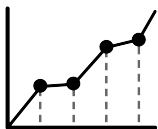
- Provides a precise and detailed representation of the current state of the project area layout facilitating accurate design and planning
- Models the terrain through the use of annotated 1 foot minor contours and 5 foot major contours
- Planimetric drafting including, but not limited to, edges of pavement, terrain breaks, paint striping, spot elevations, water boundaries, driveways, utility poles, vegetation extents, concrete pads, dirt roads, manholes, gutter flow lines, and culverts
- The digitized format allows for seamless integration with other design software
- Client's CAD template can be utilized upon request





Torsion Analysis in Single-Axis Trackers

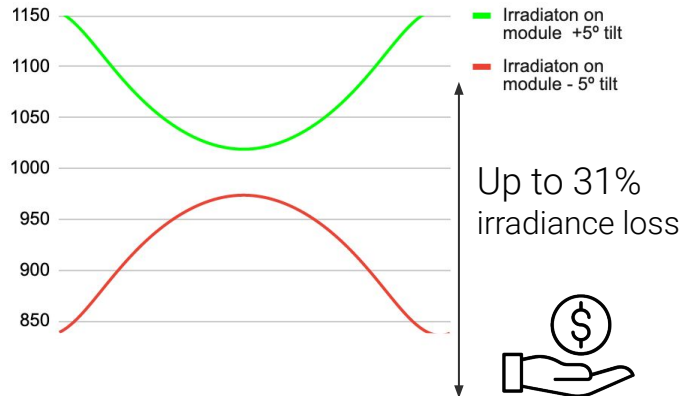
With aerial data collected over your solar site, ZeitView can calculate slope and identify deviations for an **Installation Quality Analysis** as well as an **Angle Adjustment Report** for each array.



Tilt deviation

With the tilt deviation information, ZeitView can calculate the loss of irradiance for each structure.

Annual horizontal irradiation



north-south tilt angle

- -2,86 - -1,32
- -1,32 - -0,91
- -0,91 - -0,59
- -0,59 - 0,37
- 0,37 - 3,32

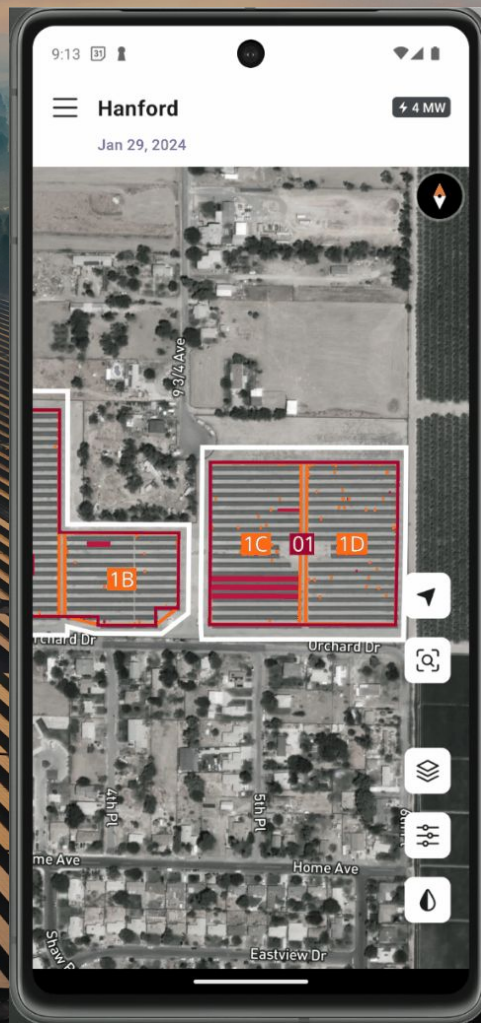
Zenith Calculations

From calculating the precise zenith of each array, ZeitView can provide the information necessary to visualize and understand the quality of your construction to help make vital adjustments as well as making better decisions when engineering and constructing future sites.



Field App

- Access inspections in the field
- Multi-OS support (Android and iOS)
- Offline capable
- GPS wayfinding
- Access to anomaly images
- Update resolution status
- Scan module serial numbers



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Q&A



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by Mark Hutchins



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by Lior Kahana



Coming up next...

Wednesday, 9 October 2024

11:00 am – 12:00 pm EDT, New York City
5:00 pm – 6:00 pm CEST, Berlin, Madrid, Paris

Tuesday, 15 October 2024

11:00 am – 12:00 pm EDT, New York City
5:00 pm - 6:00 pm CEST, Berlin, Madrid, Paris

Many more to come!

PV module quality control and testing: using data and analysis to enhance safety and performance

Understanding the dangers of arc flash in solar, battery storage systems

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Editor
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**Thank you for
joining today!**