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**DroneBase** 

## 7 February 2023

10:00 am - 11:00 am | PST, Los Angeles 1:00 pm - 2:00 pm | EST, New York City

7:00 pm - 8:00 pm | CET, Berlin



Michael Schoeck
Associate Editor
pv magazine USA



Tristan Rayner

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# DroneBase's North American Solar Scan brings transparency to U.S. solar market



Mark Culpepper
General Manager of Solar
DroneBase



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Director of Operations and Maintenance (O&M)
SMA America



# 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.



# DroneBase is now Zeitview





## What We Do



Optimize bids and construction planning

Construction

Track progress of work compared to planning

Commissioning

 $\rightarrow$ 

Verify construction and set performance baselines

4 Operation & Maintenance

 $\rightarrow$ 

Reduce performance degradation on site issues 5 Sell/Acquire

Verify performance and overall state of site



For global customers in energy and infrastructure, Zeitview builds advanced inspection software that delivers fast, accurate insights, lowers costs, and improves asset performance and longevity. We are second to none at partnering with our customers to achieve flexible, long-term solutions across their multiple asset classes.



# Our Solar Inspection Journey

Our mission is to accelerate the global transition to renewable energy and sustainable infrastructure. Since 2015, Zetiview has pursued a trajectory of supporting solar assets everywhere in the world and addressing the unique needs of multinational enterprise customers.

#### 2015 // Take to the Skies

Series A: 6.8M

DroneBase launches the "Über of drones" - high volume mass market & global operational excellence

#### 2020 // Global Expansion

Series C: 20M

Acquires **PrecisionXYZ**, focused exclusively on solar using crewed aircraft

#### 2022 // The Road Ahead

DroneBase announces **North American Solar Scan**, scanning all
U.S.assets 1MW and larger

#### 2019 // Creating a Framework

Series B: 12M

Expansion into renewables by hiring legacy **Precisionhawk** team - focus on wind with initial forays into solar

#### 2021 // Building the Engine

Acquires India-based **Airprobe**, extending ML and AI capabilities to handle increased volume and speed requirements

#### 2023 // Advancing Inspection

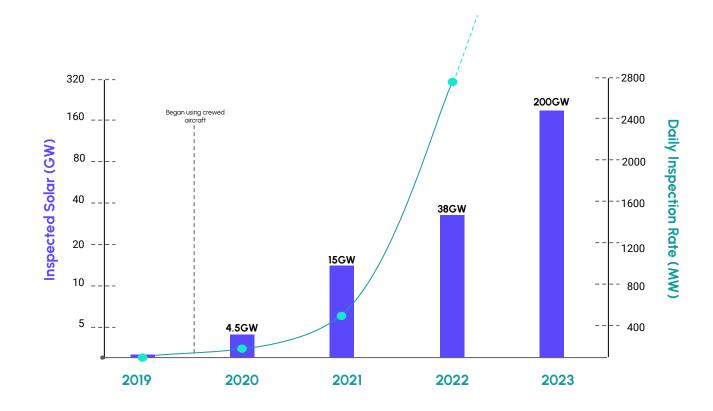
Series D: 55M

DroneBase rebrands to Zeitview to further its growth in inspections



## The Industries Largest Solar Inspection Platform

- 2019 DroneBase expanded its offerings to the solar market.
- 2020 expanded data capture using crewed aircraft.
- 2023 we are on track to capture and inspect over 200 GW



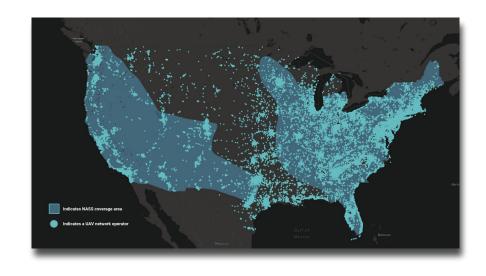


# Our Solar Inspection Journey

# Providing the first-ever objective, standardized rating system for solar assets.

Using crewed aircraft, equipped with high-quality sensors, DroneBase is capturing every active solar project in the U.S. (1 MW and larger), creating industry wide transparency and empowering stakeholders to:

- Assess investment opportunities
- Identify and compare asset condition across regions, technologies, service providers, and more.
- Identify prospects for additional sales opportunities.
- Evaluate and correlate asset condition with asset owners, vendors, and other stakeholders

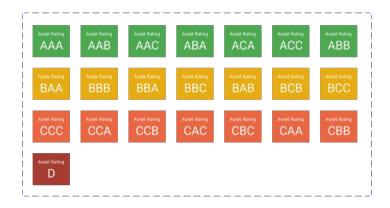




# **Solar Asset Ratings**

We believe that objective ratings of solar assets will empower standardization, transparency, and responsible decision making across the industry.

Through thermal imaging & anomaly detection, each asset has a quantitative rating based on a three letter ranking method, each letter representing an aspect of the plant.

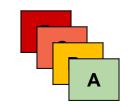






# **Solar Asset Rating Thresholds**

**Ratings are quantitative** (i.e. a number based on an objective measurement) to derive a qualitative value (i.e. "A", "B", "C" and "D"). These values are based on current industry best known methods and practices and, where available, industry standards bodies.



We expect to revise ratings as we collect more and better data over time. Noted below is our V1 rating system.

Operator Estimated DC loss due to observed anomalies	A: Healthy	B: OK	C: Improve	D: Critical Need
	99.5%+	97.5%-99.4%	80%-97.4%	Less than 79.9%
Heat Highest detected cell temperature	A: Healthy	B: OK	C: Improve	D: Critical Need
	<10°c	10-15°c	15-20°c	>20°c
Equipment	A: Healthy	B: OK	C: Improve	D: Critical Need
Anomalies per MWp	0-19.9	20-84.4	84.5-148.9	

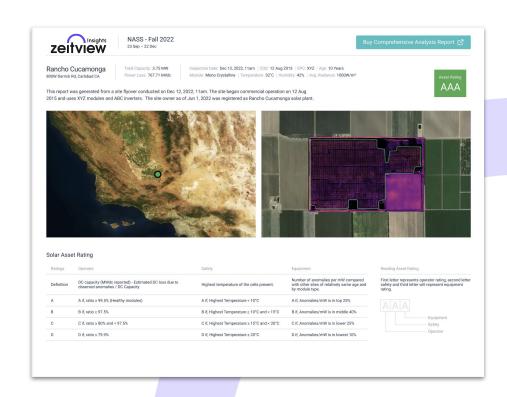


# **Solar Asset Rating Reports**

# Simplified inspection reporting at the scale of the industry.

Solar asset rating reports allow solar professionals to:

- Quickly understand asset condition and easily prioritize comprehensive scan.
- Instantly order and view comprehensive analysis reports for most at-risk solar plants.
- Rank and compare all North America based assets based on owner, O&M, size, age and more.
- Prioritize O&M activities and derive associated OPEX.





# Why It Matters

Gain access to the first-of-its-kind solar asset insights platform.

- Asset Owners & Managers
- Operations & Maintenance Providers
- Lenders & Investors
- Engineering, Procurement & Construction Firms
- Policy Makers







## North American Solar Scan - Top 10 Criteria

- Solar Asset Rating (AAA assets only)
- Asset Age (Oldest to youngest)
- Asset Size (Largest to smallest)

#### Note:

- Our rankings are based on asset condition focused on the DC side of the system. It is not a
  performance rating on the AC side of the power plant.
- Thermal data inspections have never been conducted at this scale; we fully expect that our system ratings will improve over time with higher fidelity and detail.



## Top 10 power plants - Crystalline Ground Mounts

1. United Natural Foods - Rocklin

1.4MW (DC) Rooftop System Crystalline Modules 16 Years in operation

2. Walgreens Woodland

1.4MW (DC) Rooftop System Crystalline Modules 15 Years, 5 months in operation

3. Prologis Rialto I-210 2 & 3

13.5MW (DC) Rooftop Crystalline Modules 14 Years, 4 months in operation

Santee Lakes - Padre Dam

1.03 MW (DC) Parking Canopy Crystalline Modules 14 Years, 1 month in operation

5. Port of Los Angeles - World Cruise Center

1.2MW (DC) Rooftop Crystalline Modules 12 Years, 4 Months in operation 6. Frito-Lay Modesto

1.2 MW (DC) Parking Canopy TrackerCrystalline Modules12 Years, 4 Months in operation

7. Prologis AMB Distribution Center

1.4MW (DC) Rooftop Crystalline Modules 12 Years, 2 Months in operation

8. Prologis Park Ontario Airport

8.16MW (DC) Rooftop Crystalline Modules 11 Years, 10 Months in operation

9. SPVPO22 RDC 6

2.4MW (DC) Rooftop Crystalline Modules 11 Years, 6 Months in operation

10. Prologis - Rialto

13.5MW (DC) Rooftop Crystalline Modules 11 Years, 4 Months in operation



# Top 10 power plants - Rooftop and Canopy

#### 1. Beringer Vineyards

1.6MW (DC) Single Axis Tracker Crystalline Modules 13 Years, 7 months in operation

#### 2. Henry C Garnett Water Purification Plant

1.2MW (DC) Single Axis Tracker Crystalline Modules 13 Years, 2 months in operation

#### Harrah's Rincon Casino

1.2MW (DC) Single Axis Tracker Crystalline Modules 12 Years, 10 months in operation

#### 4. Avenal

10.8 MW (DC) Fixed Tilt Crystalline Modules 11 Years,, 8 months in operation

#### 5. California Correctional Institution

6.9 MW (DC) Single Axis Tracker Crystalline Modules 10 Years, 1 month in operation

#### 6. California Valley Solar Ranch 3

300MW (DC) Single Axis Tracker Crystalline Modules 9 Years, 3 Months in operation

#### 7. California Valley Solar Ranch 4

300MW (DC) Single Axis Tracker Crystalline Modules 9 Years, 3 months in operation

#### 8. ShoEi Foods

1.03MW (DC)Fixed Tilt Crystalline Modules 9 Years, 3 months in operation

#### RE Victor Phelan Solar One

26.4MW (DC) Single Axis Tracker Crystalline Modules 9 Years, 1 months in operation

#### 10. Powhatan Solar Power Generation Station 1

1.8 MW (DC) Single Axis Tracker Crystalline Modules 9 Years, 1 month in operation



# Top 6 power plants - Thin Film Ground Mounts

#### I. Limoniera Ranch II

1.2MW (DC) Single Axis Tracker Thin Film Modules 13 Years, 7 months in operation

#### 2. Sun City

30MW (DC) Fixed Tilt Thin Film Modules 11 Years, 6 months in operation

#### 3. Rancho Seco I

12.48MW (DC) Single Axis Tracker Thin Film Modules 6 Years, 11 months in operation

#### 4. Kingbird

60 MW (DC)Single Axis Tracker Thin Film Modules 6 Years,, 9 months in operation

#### 5. Laredo Detention Facility - Solar 2 & 3

6.2 MW (DC) Single Axis TrackerThin Film Modules1 Year, 2 months in operation

#### 6. Athos II

240MW (DC) Single Axis Tracker Thin Film Modules 1 Years, 1 Month in operation



# **How We Support Your Business**



#### **Global Operations**

Localized data capture on a global scale. Software that interprets and accommodates a distributed and diverse portfolio of solar assets



#### **Well Funded**

With over \$100M in funding since our inception, DroneBase is well funded and poised for the future



#### **Scalable Solutions**

Zeitview has a proven track record of operational excellence at the commercial and utility scale



#### Comprehensive Data

We provide data that is both comprehensive and highly actionable for managers, dispatchers, and technicians



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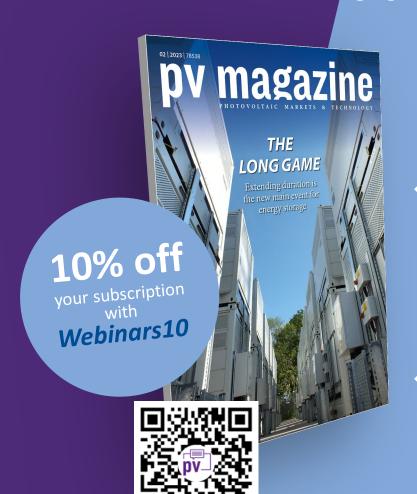
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# The latest news | print & online



LG unveils heat pump for water heating

by Beatriz Santos



<u>Australian scientists unveil method to</u> <u>produce hydrogen straight from ocean</u>

by Bella Peacock



Mostread online!



# Coming up next...

Tuesday, 28 February 2023

9:00 am – 10:00 am GMT, London 10:00 am – 11:00 am CET, Berlin Tuesday, 7 March 2023

2:00 pm – 3:00 pm GMT, London 3:00 pm – 4:00 pm CET, Berlin Many more to come!

Comprehensive breakthroughs of TOPCon modules for the Distribution market

Utility-scale solutions and progress in gaining market shares

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Associate Editor
pv magazine USA



Tristan Rayner

Editor

pv magazine

# Thank you for joining today!