

View from above

Steve Welch talks to **Will Hitchcock** about his company Above and their use of drones for inspecting solar power installations

Will Hitchcock



Will Hitchcock is founder and CEO of Above. The company delivers advanced aerial inspections and data analytics for utility scale solar.

Steve Welch: What is your role and responsibility within the company?

Will Hitchcock: I have overall responsibility to lead and drive the business vision forward. I provide strategic direction to the company and support to my management team. I am also responsible for business development and strategic customer management.

SW: Could you provide a brief summary of your company's background?

WH: I established Above in 2015 whilst working within the solar industry as head of a UK EPC. I recognised that subsidy-driven construction and pressure on solar panel costs were having an impact on the future life of assets, and that PR measurement and string monitoring alone did not give the full picture of a solar asset's health. This knowledge

prompted me to develop a commercially viable way of thermographically inspecting 100% of the solar modules on large-scale solar assets. Above was the first company in the industry to offer such a service. As a company we have grown year-on-year and now have 14 permanent team members. Our head office is at The University of Essex Knowledge Gateway, an ecosystem of innovative businesses.

SW: What is your company's offering and services?

WH: Above offers advanced aerial inspections and data analytics for utility scale solar. Our drone platforms carry the latest technology, simultaneously capturing thermal and 4K colour imagery along with essential environmental data through our custom G.A.P sensor suite. Our reports are delivered through SolarGain Inspection Hub, a cloud-based software platform built in-house by an experienced team of developers. SolarGain reports are an alternative to conventional PDF reports: their organic nature allows our clients to easily access and utilise inspection data. SolarGain enables clients to view their overall portfolio health. Site inspection reports can be viewed in a list and map view, with helpful tools to filter, categorise and annotate anomalies. The inspection hub stores a permanent record of an asset's health, which will prove to be a valuable resource as these assets mature.

SW: Who is your customer/target market?

WH: Above has worked with all branches of the solar industry, Asset owners, Asset Managers, O & M providers and technical advisors.

Investors and insurers of solar assets could also be a future target market for our service offering.

SW: What differentiates your offering in the market?

WH: What sets us above other providers is our industry experience and superior quality. We use our patented sensor and methodology to power our scientific approach, which enables us to deliver highly accurate and informative reports. Our SolarGain Inspection Hub is built from a solar PV background, prioritising accessibility and usability of data within our reports. SolarGain is evolving towards an automated solution using computer vision and AI technology.

SW: Could you provide details of a recent project or case study?

WH: The following are some good examples:-

Warranty claim

A recent project involved supporting our client with a module warranty claim. Our role was to identify a manufacturing fault across a 10MW asset constructed with two different module batches. First, the defective modules were identified using aerial thermography, measured and categorised. Then using the high-resolution RGB imagery, we were able to add additional categorisation based on the number of cell bus bars. This allowed our client to quickly and accurately provide the level of detail required to move ahead with the warranty claim. A great example of our inspection services saving our clients time and money.

Asset transaction

This case study is an excellent example of collaboration and innovation



within the solar sector. In 2018 we collaborated with a technical advisor on a high-profile Italian asset transaction. This project was an industry first. We carried out a High-Resolution aerial inspection across a 13MW site. Above worked to a tight deadline, delivering thermographic and high-resolution reports to guide engineers on the ground to key issues across the site. We overcame challenging conditions such as undulating terrains and high temperatures to consistently deliver high standards of quality.

SW: How important is collaboration, innovation and technological development in the sector and why?

WH: Utility scale solar is still an

immature sector. Overcoming the challenges, to reduce operating costs and extend asset life is critical to compete in the global energy mix. AI will shape drone technology into an optimal solution for inspecting the vast solar arrays of the future. Our collaborations with the University of Essex and Loughborough University enables us to leverage highly-skilled resources to solve industry problems and refine our service offerings. As a company within a relatively new sector, we are in a constant state of innovation. Our role is providing inspection methods and data insights to ensure solar PV maintains its efficiency over time. Innovation is a catalyst to our growth and success within the industry.

SW: How do you see the sector developing over the next five years?

WH: In the next five years we will see drones become a standard tool for solar asset management, extending beyond thermography. I anticipate a time when drones will be based in charging stations on large solar assets, regularly monitoring them and gathering data autonomously. The solar industry will continue to digitalise its processes, using AI and machine learning to automate analysis and diagnostics. Integrated software systems for monitoring assets will mean faster, more precise and actionable reports, leading to better-informed decision making.

SW: What other sectors will see the benefits of drones in their operations and maintenance?

WH: Drones will streamline operations and maintenance within solar, wind, oil, gas, nuclear, critical infrastructure and utilities. These sectors are in the early stages of integrating drones within operations and maintenance, further research and development will uncover their true potential.

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