

Fulcrum3D sheds light on solving U.S. solar industry's underperformance.

U.S. solar developers can address a number of crucial underperformance issues identified in kWh Analytics' *Solar Risk Assessment: 2022* through the adoption of pre-build resource assessments that utilize site-based measurement campaigns, according to Fulcrum3D.

kWh Analytics' *Solar Risk Assessment: 2022* report called on the U.S. solar industry to identify new solutions to issues causing underperformance across the industry. Despite being the most significant contributor to new generation capacity in the U.S. for a third year, solar power generators continue to struggle with the performance and financing of new and current projects.

kWh Analytics' report highlighted a range of data-related issues, including:

- 92% of lost EBITDA is due to underproduction caused by poor availability, unrealistic production forecasts and lower expected irradiance, with kWh Analytics saying this dwarfed all other sources of risk.
- 1-in-3 solar assets under development are overstating P50 estimates by more than 5%, which equates to equity investors locking in returns 30-40% lower than expected and reducing the overall value of investments.
- Uneven terrain at solar projects is causing up to 6% losses compared to preconstruction estimates, with industry-standard solar energy modelling software not fully accommodating of terrain variables.

The underlying cause of these issues can be linked to minimal or flawed on-site resource monitoring being deployed prior to shovels breaking ground on project construction.

Solutions to the *Solar Risk Assessment: 2022* recommendations are commonly deployed in Australia, where bankable on-site monitoring data is collated to inform and validate project modelling prior to capital being deployed in construction.

Fulcrum3D's solar resource monitoring stations deliver highly accurate measurement data which only physical on-site instrumentation can provide, including:

- Irradiance - GHI, POA, Albedo, Direct & Diffuse
- Soiling Rate & Ratio
- Temperature, Pressure, Humidity & Rainfall
- Wind Speed & Direction

These measurements are essential in assessing, financing and operating solar energy projects. They help to reduce the uncertainty inherent in computer models, improve bankability and reduce equity risk in highly geared projects.



Colin Bonner, Managing Director and Co-founder of Fulcrum3D, said, "data collection before construction has been integral to the industry's success and growth. We provide solar monitoring base hardware to give solar project developers real-time access to on-the-ground data to accurately model and forecast production outputs, mitigating overpromising or potentially underperforming.

"Complex terrain construction has also been made an opportunity through monitoring, whether on the side of a hill or next to a forest, accurate preconstruction solar measurement lets developers optimally map out solar arrays to ensure efficient production for the life of the project.

"Despite being a land with abundant renewable resources, solar generation in Australia has faced challenges getting energized. We've faced political inertia and difficulties integrating into the highly regulated and aging energy grid.

"Monitoring and logging bankable solar data throughout a solar project's lifespan, from proposal to end of operation, has been how the Australian solar industry has proven success and overcome its opposition, becoming integral to the national energy supply network."

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