POWER RAY™

CASE STUDY

MIDWAY PROJECT, SUN TRIBE

EXECUTING A UTILITY-SCALE SOLAR PROJECT UNDER ACTIVE CONSTRAINTS



INTRODUCTION

Utility-scale solar construction rarely operates under perfect conditions.

Projects are often shaped by competing pressures. Civil delays impact sequencing. Terrain introduces technical challenges. Timelines compress as upstream work falls behind. By the time installation begins, the margin for error is already narrow.



In these environments, success is not determined by whether problems occur. It is determined by how those problems are handled.

The Midway project presented a scenario where multiple constraints had already compounded before Power Ray mobilized. The original contractor was no longer in place. The schedule had slipped. Site conditions were not fully resolved. And the remaining work had to be executed under increasing time pressure.

Power Ray was brought in to step into that environment and move the project forward without allowing those challenges to escalate further.

BACKGROUND

Sun Tribe, an EPC focused on utility-scale solar development, was executing a 12 MW project that required coordinated mechanical installation across a complex site.

Under standard conditions, projects of this size follow a predictable flow. Civil work establishes access and grading. Installation crews move sequentially through drilling, pile driving, racking, and module placement. Equipment and labor are deployed in a consistent progression across the site.

At Midway, that sequence had already been disrupted.

Before Power Ray entered the project:

- **The originally awarded subcontractor had withdrawn**
- **Civil work had not progressed in a way that supported continuous installation**
- **The schedule had shifted, pushing execution into winter conditions**

> This created a different operating environment. Instead of executing against a stable plan, the project required a partner capable of adapting to incomplete conditions while maintaining forward progress.



THE CHALLENGE

LOSS OF SEQUENCING ACROSS THE PROJECT

The most immediate challenge was the breakdown of the standard construction flow.

Although the project was designed as a 12 MW build, site conditions prevented continuous movement across the work area. Access was inconsistent, and civil readiness varied across different portions of the site. As a result, installation could not proceed in a single, coordinated sequence.

Crews were required to move between phases based on where work was available, rather than following a planned progression. Equipment had to be reallocated frequently. Work that would typically be completed in a single pass had to be revisited multiple times.

Operationally, the project functioned less like one continuous build and more like several smaller builds taking place within the same footprint. This created ongoing pressure on:

- **Crew efficiency, due to repeated mobilization**
- **Equipment utilization, as machinery could not remain in steady operation**
- **Schedule predictability, with progress dependent on shifting site conditions**



The challenge was not simply completing the work. It was doing so without losing momentum in a fragmented environment.

THE CHALLENGE

SITE CONDITIONS REQUIRING TECHNICAL ADAPTATION

In addition to sequencing challenges, the site itself introduced significant technical constraints.

The terrain was uneven, creating conditions that affected installation methods. Early in execution, Power Ray encountered widespread pile refusal across multiple areas of the project.

Pile refusal occurs when ground conditions prevent piles from being driven to the required depth, either due to density or subsurface obstruction. Left unresolved, this issue can lead to installation delays, structural concerns, and rework.

Rather than proceeding with inconsistent results, Power Ray initiated a validation process.

The team conducted pile load testing across representative areas of the site, evaluating:

- **The frequency and distribution of refusal conditions**
- **The effectiveness of pilot hole drilling as a mitigation strategy**
- **The appropriate drill sizes required to balance drivability and load performance**

The findings confirmed that standard installation methods would not be sufficient.

Approximately eighty percent of the site required pilot hole drilling to achieve proper installation while still meeting load requirements.

> This required a full adjustment to the installation approach across the majority of the project, not just isolated areas.



THE CHALLENGE

COMPOUNDING SCHEDULE PRESSURE AND WINTER CONDITIONS

As technical and sequencing challenges were being addressed, the project timeline continued to compress.

By the time Power Ray mobilized and began execution, the project had transitioned into winter conditions.

Cold weather introduced additional operational constraints:

- **Reduced production efficiency across crews**
- **Increased safety considerations related to ground conditions and equipment handling**
- **Greater variability in daily work output**

During construction, a weather event resulted in a full shutdown of approximately two weeks.
This compounded existing delays and further reduced the available time to complete the project.

At this stage, the project was operating under multiple simultaneous constraints:

- **A delayed starting point**
- **Fragmented site access and sequencing**
- **Weather-related downtime**
- **Widespread technical installation challenges**



The risk was no longer limited to inefficiency. The risk was loss of control over the schedule entirely.

POWER RAY'S ROLE

Power Ray was engaged to execute the mechanical scope while stabilizing progress across a project that had already lost its original sequencing.

The approach focused on resolving constraints early, adapting execution to real conditions, and maintaining continuity across all phases of work.



ESTABLISHING A REPEATABLE INSTALLATION METHOD

Before scaling installation across the site, Power Ray prioritized validation. Through targeted pile load testing and drilling trials, the team identified a method that would:

- **Address refusal conditions consistently**
- **Maintain structural integrity under load requirements**
- **Be repeatable across varying site conditions**

This step was critical.

Without a validated approach, installation would have resulted in inconsistent outcomes, increased rework, and further delays.

> By confirming the correct methodology early, Power Ray created a stable foundation for the remainder of the project.

POWER RAY'S ROLE

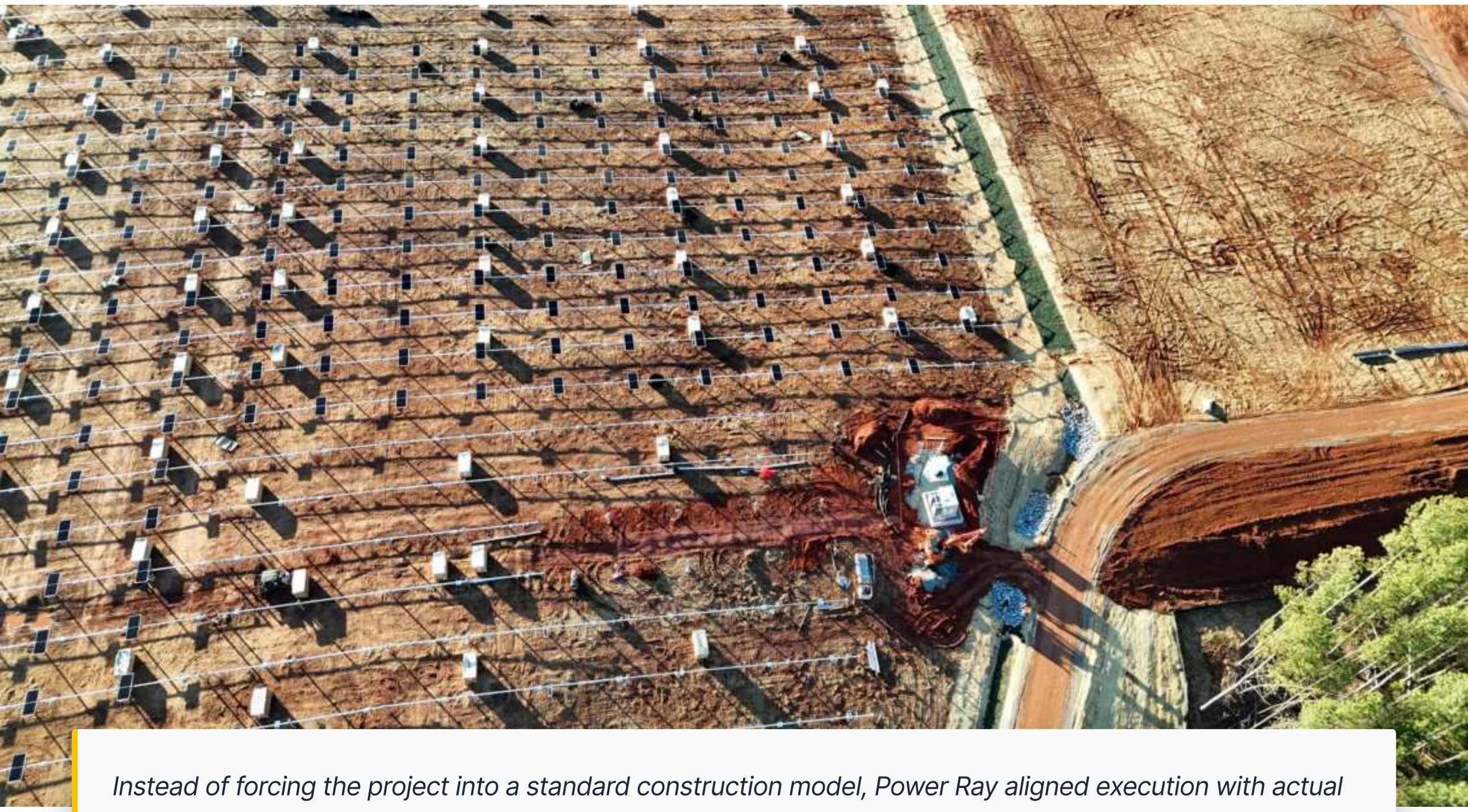
ADAPTING EXECUTION TO FRAGMENTED SITE CONDITIONS

With confirmation that pilot hole drilling would be required across most of the site, execution was structured around flexibility rather than fixed sequencing.

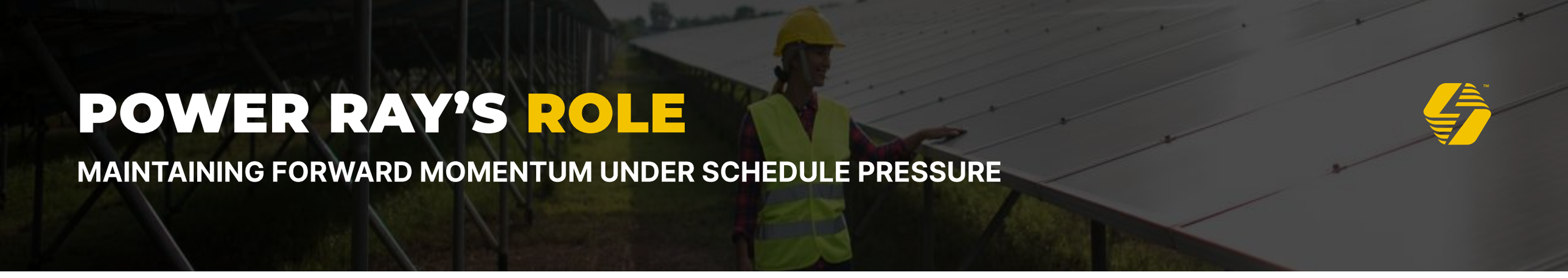
Crews and equipment were coordinated based on real-time site readiness. Work progressed in phases that aligned with available access rather than predetermined zones.

This required:

- **Continuous communication between drilling, pile driving, and installation teams**
- **Frequent reallocation of labor and equipment**
- **Active management of work fronts to prevent idle time**



Instead of forcing the project into a standard construction model, Power Ray aligned execution with actual site conditions while preserving overall progress.



POWER RAY'S ROLE

MAINTAINING FORWARD MOMENTUM UNDER SCHEDULE PRESSURE

Given the compressed timeline, maintaining momentum was essential.

To offset delays and absorb lost time, Power Ray extended execution capacity across the project. Work schedules were expanded to include weekends and holiday periods, allowing crews to continue progressing work despite interruptions earlier in the project.

This approach ensured that, even as production rates were affected by weather and conditions, the project did not stall.

> *Momentum was maintained not through speed alone, but through consistency of execution.*



POWER RAY'S ROLE

MANAGING COORDINATION IN A HIGH-PRESSURE ENVIRONMENT

Projects operating under these conditions introduce friction across teams. Sequencing changes, access limitations, and shifting priorities create challenges in coordination between crews, equipment, and project leadership.

Throughout execution, Power Ray maintained alignment across all active scopes of work. Issues were addressed as they arose without interrupting overall progress.

The focus remained on controlled execution:

- **Maintain communication across teams**
- **Resolve constraints as they appear**
- **Continue progressing work without escalation**

> *This consistency was critical in preventing small issues from compounding into larger delays.*



THE RESULTS

Despite entering under delayed and constrained conditions, the project was completed with controlled execution.

Power Ray maintained continuity across all phases of work, even as the project operated under:

- **Fragmented sequencing**
- **Widespread installation challenges**
- **A two-week weather shutdown**



The final outcome aligned with expected timelines for comparable projects under standard seasonal conditions.

The project was delivered:

01 **Safely and without incident**

02 **In line with required quality standards**

03 **With consistent coordination and execution**

Most importantly, the project continued moving forward in an environment where it could have stalled entirely.

CONCLUSION

Projects of this nature highlight the difference between planned execution and actual capability. In stable conditions, construction follows a defined sequence. In constrained conditions, that sequence breaks down.

When that happens, successful execution depends on the ability to:

- **Identify and resolve site-specific challenges early**
- **Adjust methods and sequencing without introducing rework**
- **Maintain coordination and momentum under pressure**

The Midway project required all three.

> Power Ray’s role was not to simplify the project or remove its challenges. It was to manage those challenges in a way that kept the project moving forward.



LET'S WORK TOGETHER

When projects fall behind, the risk is not limited to schedule. It extends to coordination, cost, and overall delivery.

Power Ray works with EPC teams to maintain control under real-world conditions, ensuring that projects continue moving forward even when plans change.

> **REQUEST A BID TO EVALUATE FIT FOR YOUR NEXT PROJECT.**

CONTACT US:

(432) 895-3019

www.powerrayllc.com

pr@powerrayllc.com

