

Customize racking and eBOS solutions at scale with a reliable solar partner

Learn how a developer successfully delivered a portfolio of five projects with the help of a single-source provider

Background Unearthing the best-fit solution provider for a milestone project

In upstate New York, a developer, CS Energy, aimed to deliver a portfolio of five community solar projects totaling 25.4 MW in solar energy output. All five solar projects were located on separate PV sites across two different counties, Oswego and St. Lawrence. Each project ranged from 3.86 MW to 6.25 MW in size and were part of the local utility company's community solar program.



The developer's goal was to launch the completed project that very year. Due to our expertise in coordinating and delivering against tight deadlines, as well as customizing fixed-tilt and eBOS solutions for site-specific needs, CS Energy determined that Terrasmart was the ideal racking and eBOS solution provider for the project.

Challenge

Overcoming tough terrain challenges amid tight deadlines

The plan was for all five solar projects to be designed, installed, and launched within the same time frame, which meant that pressing deadlines needed to be met in order to achieve the target launch dates. The five projects were located in four different towns, Gouverneur, DeKalb, Richville, and Volney. This meant that an efficient schedule had to be developed quickly—from the manufacturing stage all the way to project installation.

Another key challenge was the wetland area of Dekalb III, the site located in Richville. We were granted permission to penetrate the ground with a driven pile, but due to the complexity of the terrain, it failed to meet the embedment depth. Additionally, our installation team was not permitted to excavate the area due to site restrictions. As a result, both our project management and site installation teams were challenged to overcome this critical on-site obstacle by developing an efficient, cost-effective solution on the fly.



Solution

Providing turnkey expertise in eBOS and fixed-tilt installation

As a single-solution provider, we provided fixed-tilt racking and eBOS solutions for the five project sites—Dekalb I, Dekalb II, Dekalb III, Gouverneur, and Volney.

GLIDE Wave was selected by our engineering team as the best racking solution based on its ability to follow the existing terrain of the project with continuous rows. Its value-engineered design also allowed for fewer foundations while maintaining the structural integrity of the driven piles used across the sites. The bifacial modules were installed at a 25-degree angle and in portrait orientation. Additionally, the racking was also optimized to bear 60 psf snow loads to accommodate the region's winter weather concerns.

Designed with efficient installation in mind, GLIDE Wave features pre-assembled parts and components, reducing the number of connections needed at each table/bay by up to 50%. Components are designed with adjustable tolerances to make field installation a smoother process.

In addition to providing a custom racking solution for each site, our integrated team also provided a total of 122 DC combiner boxes across the five projects.

eBOS Project Specifications

Project Name	eBOS Solution	System Size
Dekalb I	27 DC combiner boxes	6.02 MW
Dekalb II	18 DC combiner boxes	3.86 MW
Dekalb III	18 DC combiner boxes	4.00 MW
Gourverneur	24 DC combiner boxes	5.23 MW
Volney	35 DC combiner boxes	6.25 MW

All five sites were designed and engineered in-house by the same team to ensure uniformity and efficiencies across the portfolio project. This resulted in a smooth design and engineering process with minimal revisions. With racking and eBOS manufactured in-house, we were able to deliver more competitive lead times and ensured the project was completed on budget and on spec.

To streamline communication across the five projects, we appointed an experienced project manager to serve as the single point of contact between Terrasmart and CS Energy. During the installation period, our project manager initiated daily calls with CS Energy to provide ongoing status updates. Our seasoned project manager oversaw the installation teams working across the five PV sites to minimize delays and ensure that each site had sufficient manpower at all times. This initiative bore prudent results, as we were able to shift manpower between the sites more effectively and without delay when Dekalb I, the northern site in DeKalb, required additional labor during installation.

Although pile foundations were the best fit for this project, there was still a small risk of refusal across all five sites. We had one drilling crew cycle through the site to remediate refusal work. With Terrasmart managing all sites, we coordinated the drilling crew to go from site to site, minimizing additional mobilization costs for the customer.

To overcome the wetland terrain in Dekalb III, our seasoned engineering team designed an inground spread footer installed above grade to circumvent the need to penetrate the soil. This quick turnaround period, enabled by a seamless communication process, ensured that the installation would continue on time, as scheduled.



Result

Driving efficient solar installation with a single-source provider

Not only did our experts coordinate a successful installation timeline and overcome tough terrain challenges, but they also did so while adhering to tight project deadlines across all five PV sites. This was achieved through optimized workflows and good communication between the various teams under the supervision of a single project manager, in combination with best-in-class lead times attained by Terrasmart's in-house assembly.

All five projects achieved commercial operation by year's end in 2022—on time and on budget.

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Overseeing five projects occurring simultaneously involves a lot of moving parts. Daily communication was crucial. Being able to manage all five sites ensured we optimized installation and could finish the projects on time.”

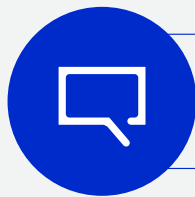
— Max Ward, Terrasmart's Project Manager

Conclusion

Customize at scale to launch successful solar with the right expertise

For site owners, developers, and EPCs looking to launch successful solar projects at any scale, working with an experienced racking and eBOS partner can make all the difference. Address project complexity upfront to save time downstream in the field. Working with a single-source provider from start to finish will not only help to accelerate on-site installation, but also mitigate risks and prevent unwanted delays.

With more than 15 years of experience customizing racking and eBOS solutions for site-specific needs, we have a long track record of delivering successful solar projects at every scale—from the commercial and industrial sectors to utility-scale and agrivoltaic sites. Optimize project efficiency with a reliable solar partner that has the expertise to help you customize your racking and eBOS solutions at scale, reduce fabrication lead times, and deliver your solar projects on time and within budget.



Talk to one of our expert team members to help get your project started.
[Contact us](#) today.