



SolarGik's Short Tracker Table

Boost Power Density & Overall Production



Location:
Illinden Municipality,
Macedonia



Structure: SolarGik
VersaTrack
tracker



Control:
SolarGik's In-house
algorithm package

 **Size:** 1.5 MWp | **GCR:** 60.8% | **Max. wind speeds:** 44 m/s | **Height:** Torque Tube at 1.3m

Challenges & Requirements

- Deploy trackers at a high GCR on an oddly-shaped site with varying widths.
- The local grid has long interconnection queues and offers priority for projects that can produce more energy on the "shoulders" when its most valuable (the area has many fixed-tilt projects).

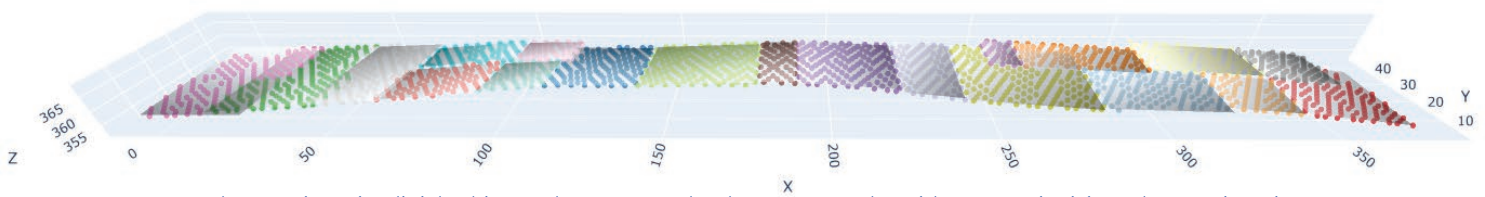
Project Goals

- Design a project with an IRR that is high enough to cross the hurdle rate and get approved.
- Use SolarGik's tracker to provide more production than fixed-tilt without a significant increase in CAPEX.

SolarGik's VersaTrack Tracker for Oddly-Shaped Parcels

- **Structure** – We deployed varying tracker lengths of 12, 16, or 24 panels to maximize land utilization. The longest row at the site had 32 panels – far below the minimum length required by industry standard trackers. This flexibility allowed us to boost power density.

- **CAPEX** – Our tracker uses a small, yet reliable, motor, and a 2-in-landscape configuration which allows us to use 20–30% LESS steel than standard trackers. This significantly lowers project CAPEX.
- **Advanced Tracker Algorithms** – Solargik deploys backtracking, smart backtracking, and diffuse optimization algorithms to boost overall site performance.
- **Deploying Algorithms on Sloped Terrain** We use 3D modeling and slope analysis to divide the solar field into clusters, with similar slopes both within and between rows. Adjusting the pitch parameter within each cluster optimizes the tracking strategy, reducing interrow shading. Using smaller clusters of hardware and software allows for greater control and flexibility in optimizing across the entire site.



The project is divided into clusters to deploy smart algorithms optimizing the entire site

Bottom Line

- Trackers not only produce more energy but produce energy on the “shoulders” when its most valuable. Flexible production is prioritized by the grid in Macedonia which gave this project preference to skip the interconnection line ahead of competing fixed-tilt projects.
- SolarGik’s tracker increases production efficiency by minimizing shading losses and boosts overall production by increasing power density



The Solargik Approach

SolarGik’s unique tracker structure and advanced controls help create highly versatile, productive, and optimized PV arrays. The tracker’s short table length of 8-24 panels allows smaller “building blocks” to create flexible site layouts on highly complex terrains. Our tracking algorithms are explicitly designed to enhance our 2-in-landscape configuration and short tracker. The synergy between our hardware and software offering helps developers “unlock” projects by creating a competitive LCOE in places typically considered not financially viable – steep slopes, oddly shaped, sites, and Agri-PV.