



AgriVoltaics with Solargik

The Synergy Between Vineyards & Solar Energy



Location:
Rehovot,
Israel



Crop:
Grapes



Structure: SolarGik
VersaTrack
Tracker



Control:
SolarGik's In-house
Agri-PV SCADA

 **Size:** 15 kWp (Research Site) | **Height:** Torque Tube at 5m

Project and Research Goals

- Research the benefits of integrating PV trackers and grapes with global developer, EDF, and the Faculty of Agriculture at the Hebrew University of Jerusalem.
- Collect and measure all the relevant solar parameters (GHI, AC and DC production, Wind, Tracking Angles, Temperature, etc.)

Challenges

- Complex structures
- Sharing the sunlight
- Competitive LCOE

SolarGik's Solution for Vineyards

- **Structure** – 5-meters high with thick pylons in standalone format (no cross beams) This allows grape harvesters to move through the field unimpeded.
- **Driven Piles** – No concrete foundations
- **Panel range of motion** +95° in one direction to allow easy cleaning from below
- **Easy Installation** – Minimal footprint on agricultural setting, lowering potential harm to crops.

- **Agri-SOMA: SolarGik's in-house SCADA system**

Centralized decision-making SCADA system receives inputs like crop models, shading patterns, irradiance, weather forecasting, and agricultural sensors. Can react to 'red flags' to keep crops safe – temperature, hail, soil moisture, etc. Balances sunlight use between crops and electricity production in a way that maximizes LCOE.

Agri-PV Benefits for Vineyards

- Grapes have dynamic irradiation needs that varies based on location, climate, season, and time of day
- Prevent grape overheating which stunts growth
- Use less water, by providing shade in peak sunlight hours



.....● “ SolarGik’s professionalism, engineering expertise, and unique tracking solution helped make this research project a reality. The tracker installation was simple and fast and caused minimal disturbance to the surrounding crops – a trait crucial for farmers everywhere. In addition, their monitoring platform gives us 24/7 insight and increases visibility into what is happening at the site – this is crucial for the research project to be successful and offer results that can scale to vineyards across the globe. ”

-EDF, Israel



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.