Case Study: Shaded installation in Monterrey, Mexico

Residential roof installation

Location: Monterrey, Nuevo Leon, Mexico

System Size: 16.32kWp

Modules: 64 panel polycrystalline 255W
64 Tigo® TS4-L (Long Strings)

Challenge
A roof installation with numerous tall, thick trees around the South and West sides of the house and high wall barriers on the roof, creating a lot of shade.

Summary
Sonne Energy Solutions installed 64 panels on a roof top in Monterrey, Mexico. The installer was expecting 78.20 kWh daily, which is 80% of panel efficiency, the norm in traditional solar. Hoping to get more out of the 64 panels, they installed the TS4-L (long strings) from Tigo®, through Exel Solar.

Projected Outcomes/Solution:
The installation with the Tigo® TS4-L optimizers is generating 30% more energy than a traditional solar system (102.38kWh vs 78.2 kWh). Panels are generating 245W (96% of Wp) instead of 217W, which is 85% of the maximum panels efficiency.

The installed system has an instantaneous maximum production of 14.35kW (87.9% of the expected 16.32kWp).

Thanks to the optimization and monitoring the Tigo® system, a damaged panel was detected immediately upon installation and replaced. Without Tigo® smart modules, this damage would have taken at least 4 months to discover and cost the homeowner loss of power and revenue (see diagram below of damaged panel.)

Damaged (outlined) panel detected in less than 5 seconds, was producing 35% less energy than the modules around.