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

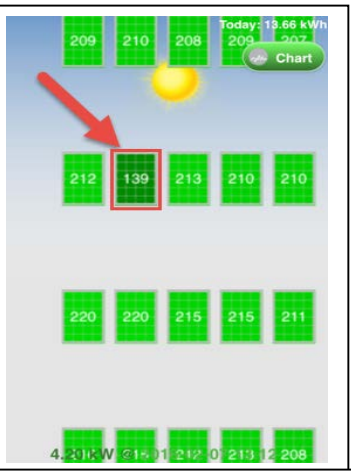
Sonne Energy Solutions installed 64 panels on a roof top in Monterrey, Mexico. The installer was expecting 78.20 kWh daily, which is 80% of panel efficiency, the norm in traditional solar. Hoping to get more out of the 64 panels, they installed the TS4-L (long strings) from Tigo®, through Exel Solar.

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.

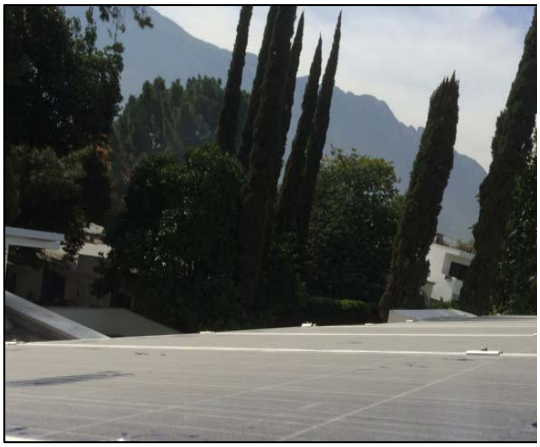
The installed system has an instantaneous maximum production of 14.35kW (87.9% of the expected 16.32kWp).

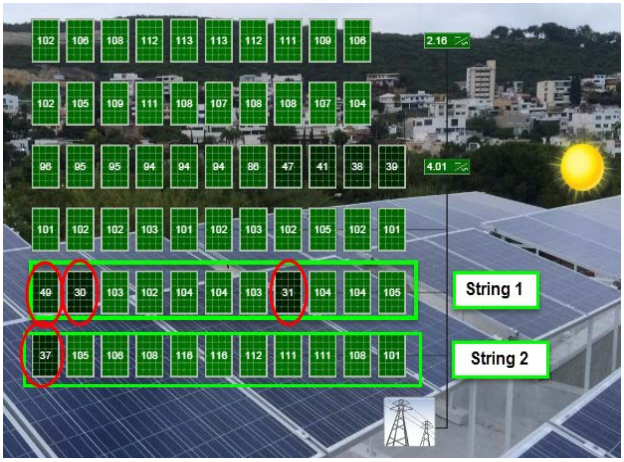
Thanks to the optimization and monitoring the Tigo® system, a damaged panel was detected immediately upon installation and replaced. Without Tigo® smart modules, this damage would have taken at least 4 months to discover and cost the homeowner loss of power and revenue (see diagram below of damaged panel.)



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

High roof walls and tall trees surrounding the property cast shade on the panels





Underperforming panels due to shade do not impact the surrounding modules production.