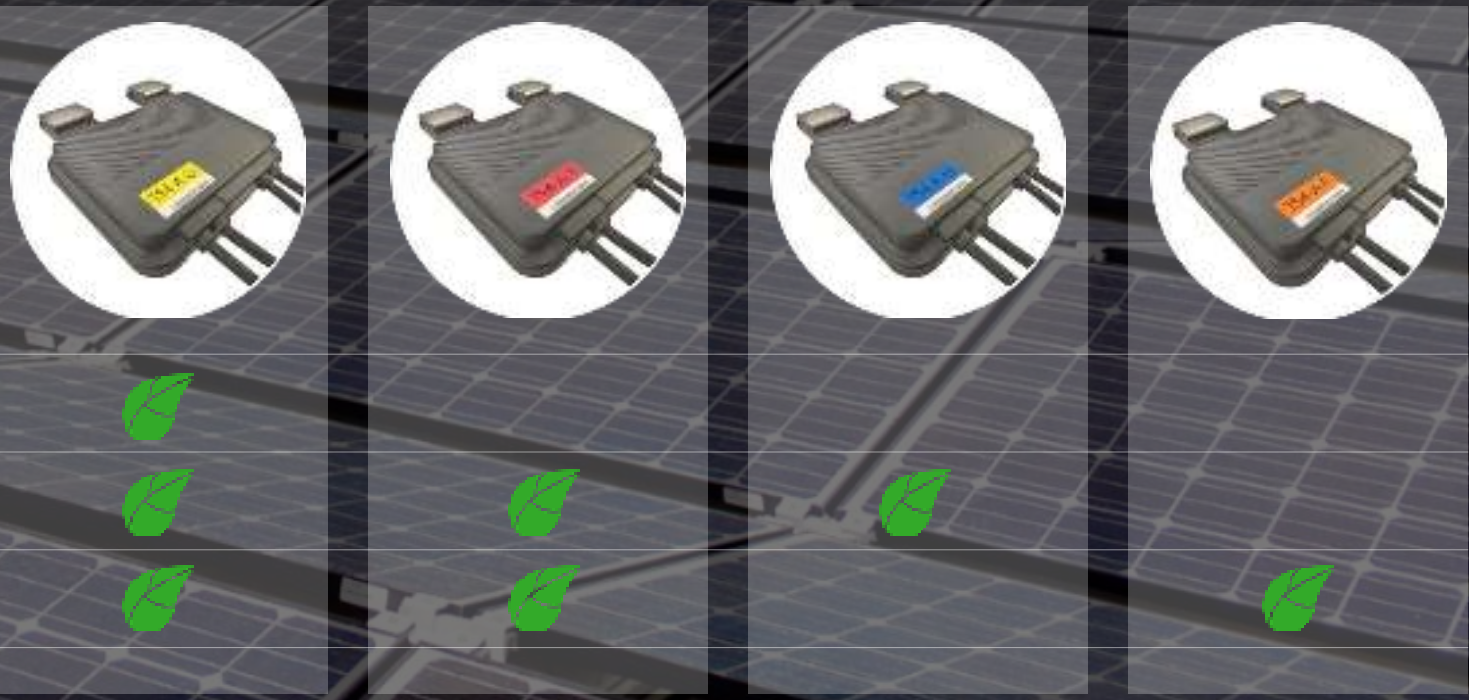
Tigo®

# Commercial applications

# Tigo enables the intelligent PV system

- Flexibility to choose the features you want
- Scales to any size installation (residential → utility)
- Highest reliability in the industry

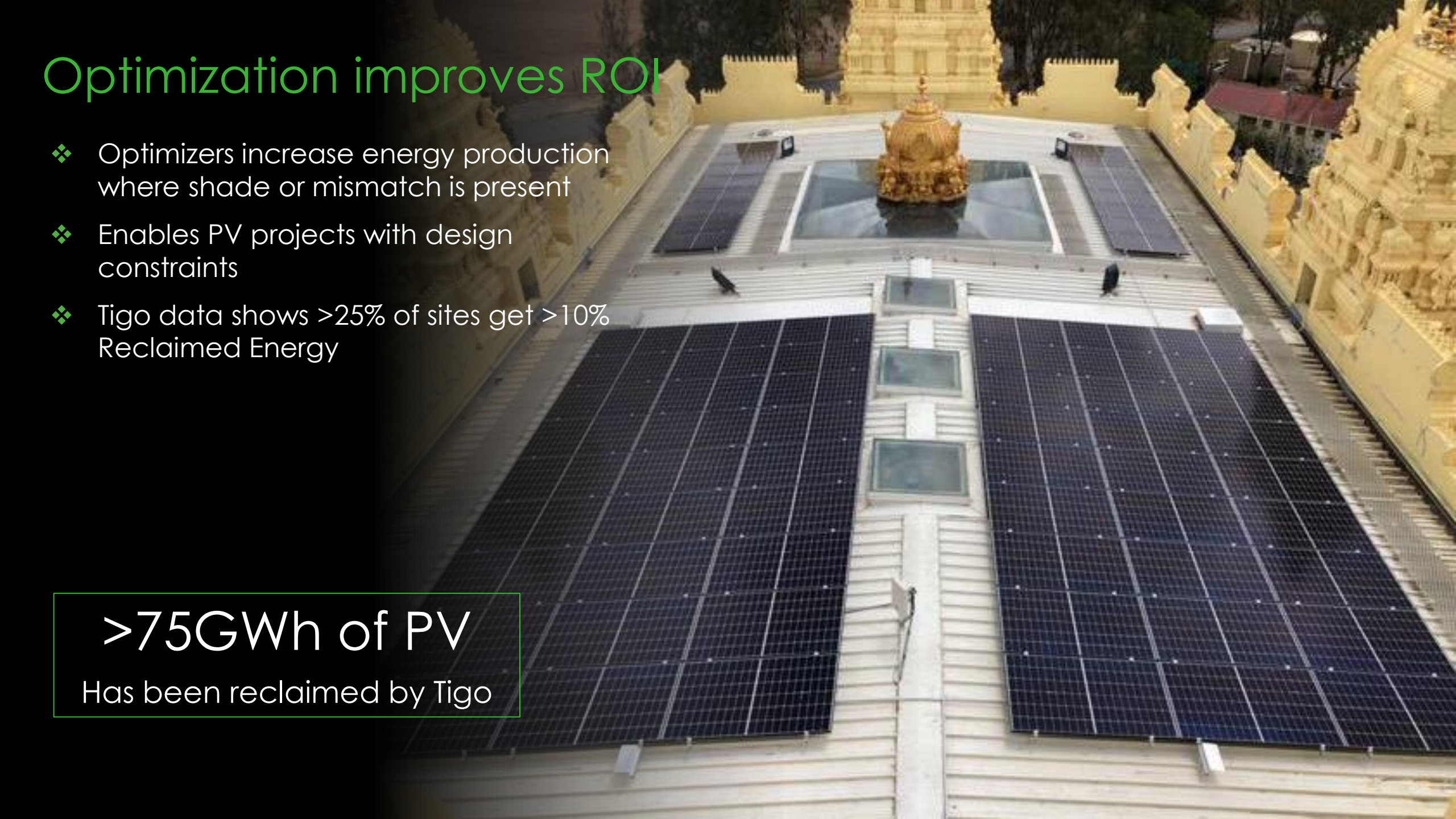
**Tigo TS4 Flex MLPE platform**



| Features | | | | |
|---|---|---|---|---|
| Optimization | ✓ | | | |
| Monitoring | ✓ | ✓ | ✓ | |
| Safety | ✓ | ✓ | | ✓ |

# Optimization improves ROI

- Optimizers increase energy production where shade or mismatch is present
- Enables PV projects with design constraints
- Tigo data shows >25% of sites get >10% Reclaimed Energy



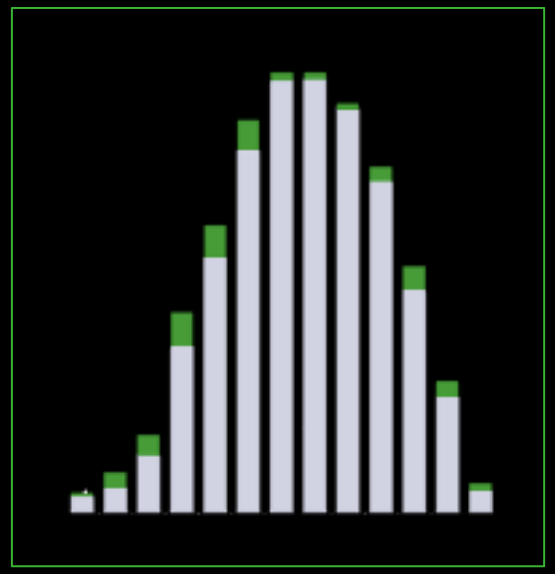
**>75GWh of PV**

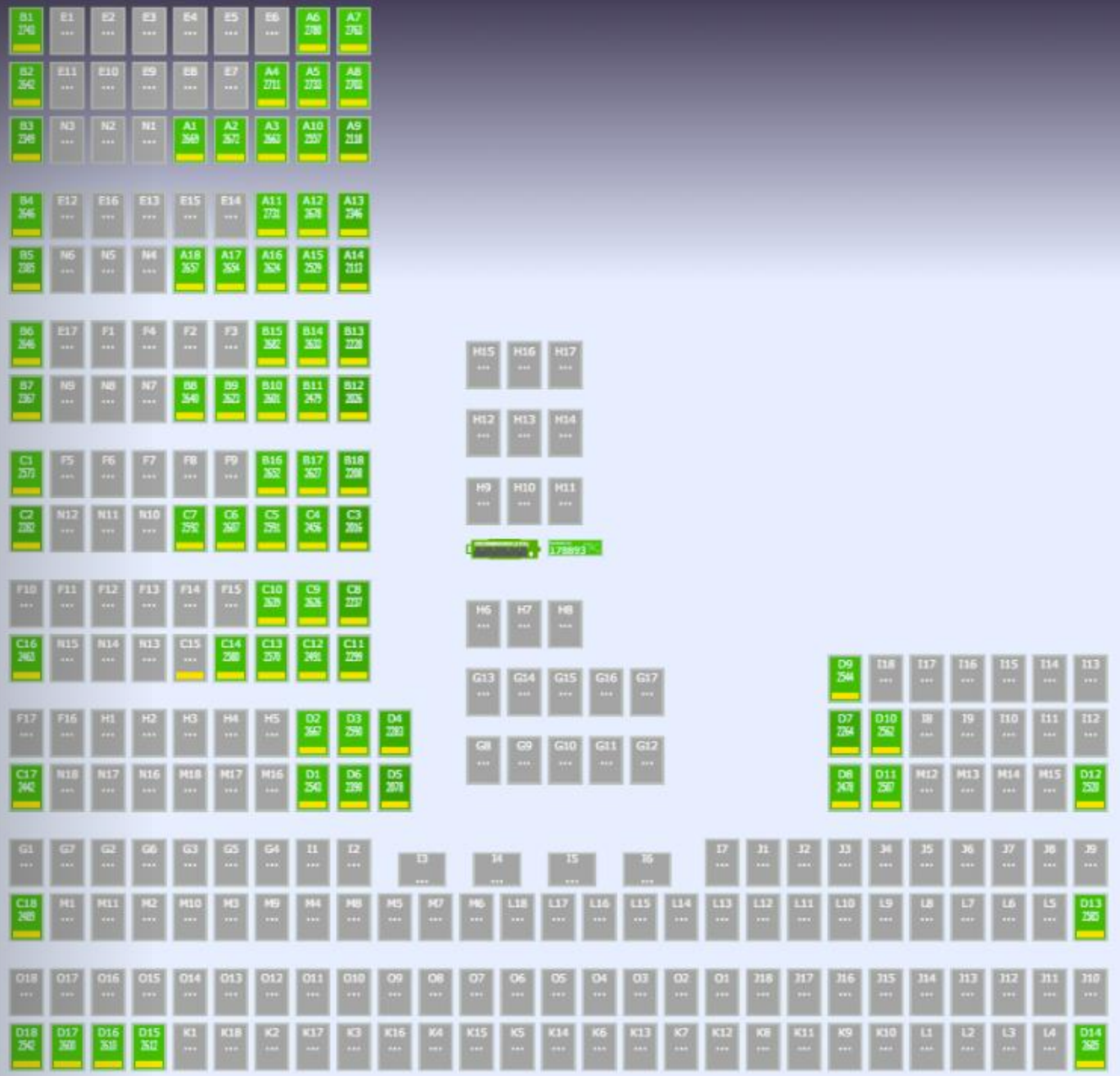
Has been reclaimed by Tigo

# Selective deployment

**Optimize only shaded areas**

- Best performance
  - Shade mitigation
  - Minimal efficiency losses
- Lowest cost
  - Only 25% optimizers needed
- Less time to install





# Retrofit

**TS4-A-O**

- Works with every inverter
- Mitigates mismatch
- Allows unparalleled visibility

→ **Improves system's performance**

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# Monitoring lowers O&M $

**Ex: branches block the floating array**

- Tigo Energy Intelligence (EI) identifies low performing modules immediately
- Installer sends techs (2 bc on water)
- Techs initiate Tigo Rapid Shutdown to reduce shock risk during repairs
- Techs know the precise modules to fix
- Performance is validated via EI portal

>1GWh daily PV

Is monitored by Tigo

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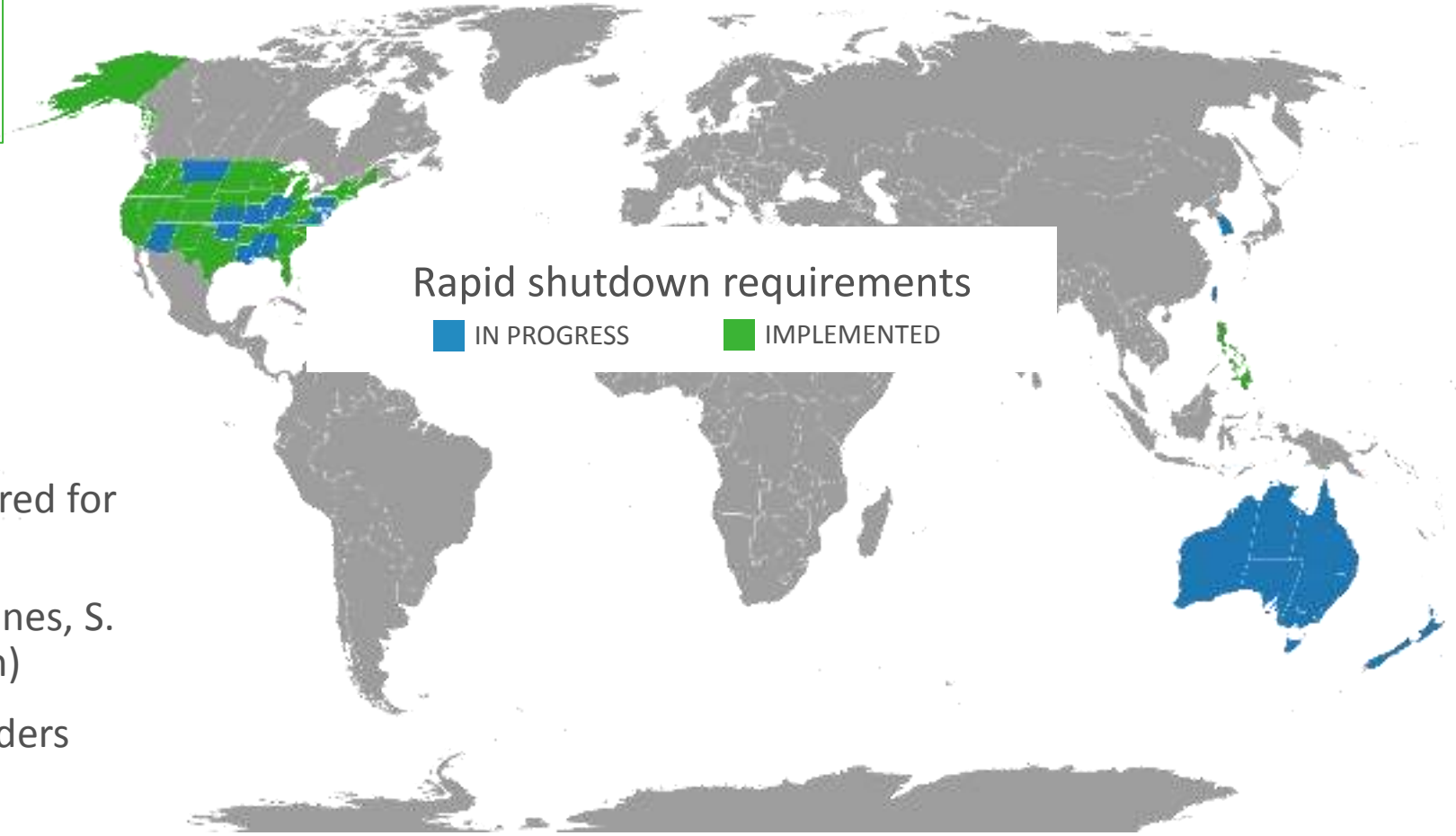
# Rapid Shutdown: now required for PV safety

## Tigo: #1 provider

Of dedicated RSD's




**Safety codes being implemented**

- Rapid shutdown devices (RSD's) required for new US rooftop PV
- Expanding to other countries (Philippines, S. Korea, Australia, New Zealand, Taiwan)
- Reduces shock hazard for first responders

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# Tigo's O,S series architecture

Rapid shutdown, plus additional features:

- **O:** Monitoring & Optimization
- **S:** Monitoring

## MLPE

**TS4-A-O** (Optimization) on each module

AND / OR

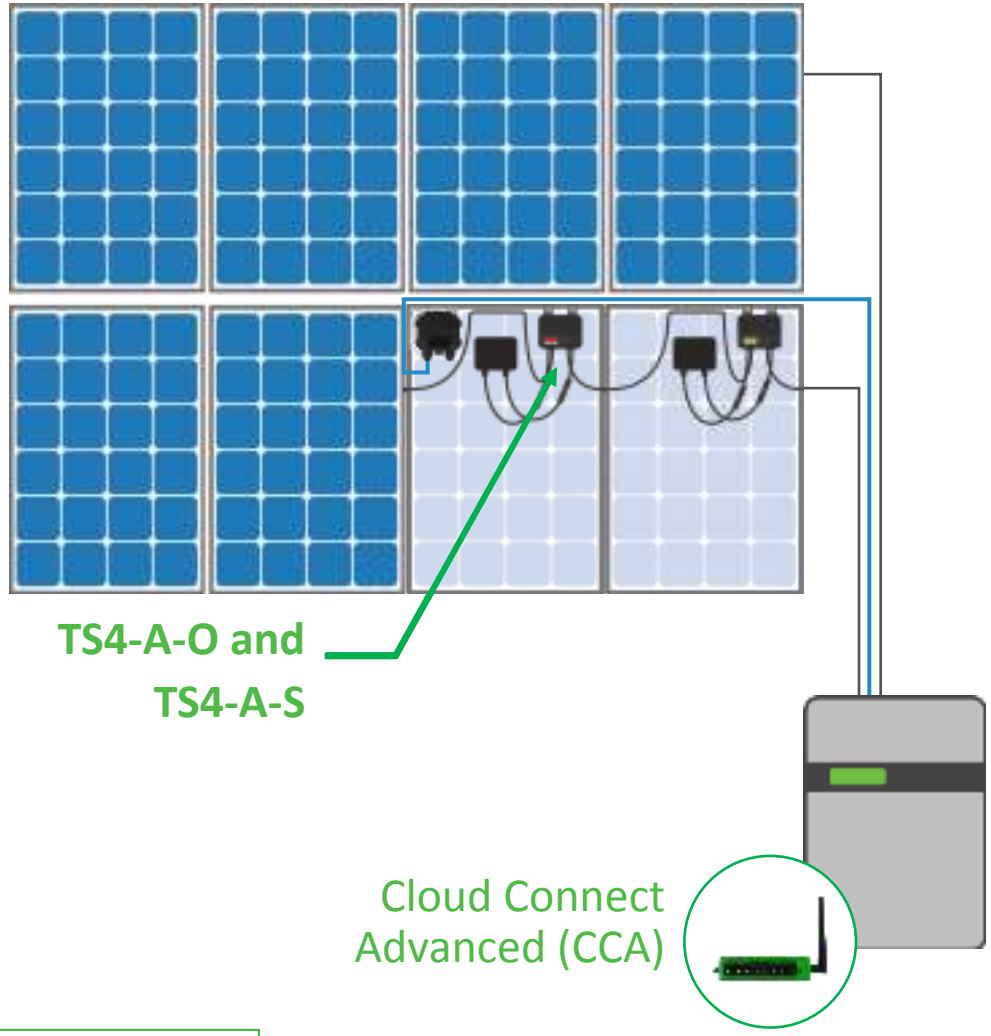
**TS4-A-S** (Safety) on each module

## COMMUNICATION

**Cloud Connect Advanced** (CCA) integrated or add-on

AND

**Tigo Access Point** (TAP) connects to CCA via RS-485




Simple, flexible deployment options

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# Tigo's F-series architecture

The most reliable, cost effective way to meet rapid shutdown requirements

## MLPE

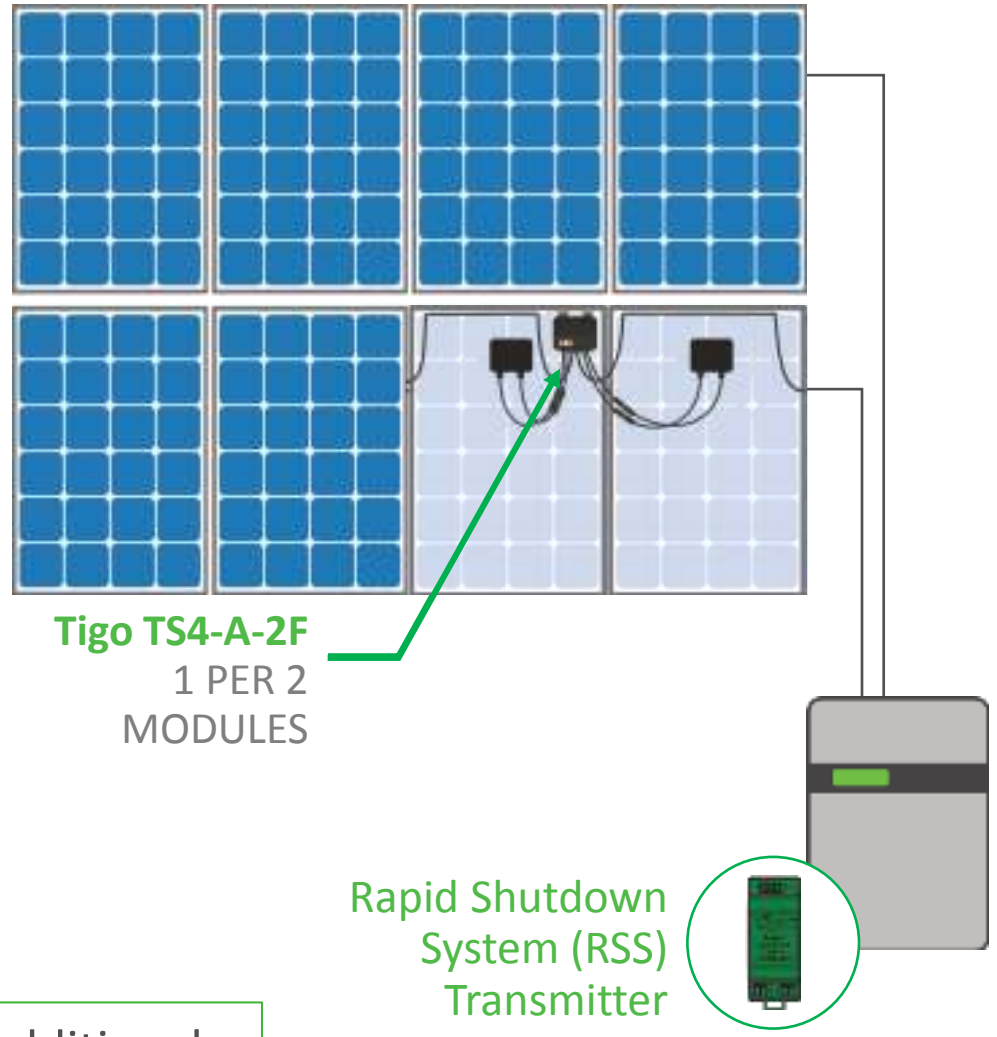
**1x TS4-A-F** for each module

AND / OR

**TS4-A-2F** for every 2 modules

## COMMUNICATION

RSS Transmitter
(add on or integrated)




PLC communication with no additional ground wire required

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# Tigo delivers rapid shutdown reliably

<0.01%

RETURN RATE

## The simplest solution on the roof

- Microinverters require a lot of electronics on the roof
- Some optimizers are constantly operating, require ground wire
- Complexity can cause issues → truck rolls → expenses

Tigo is the lowest risk solution

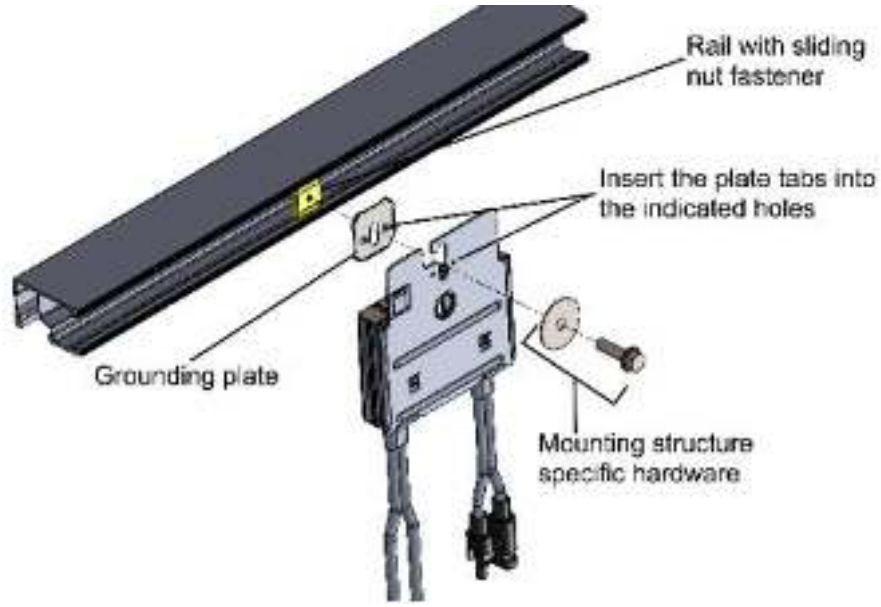
# Simple installation

- TS4-A-O does not require a ground wire
- Clips right onto the frame
- No bolts, screws, washers, wrenches, mount kits, etc. required

**Time required for a 300-module installation:**

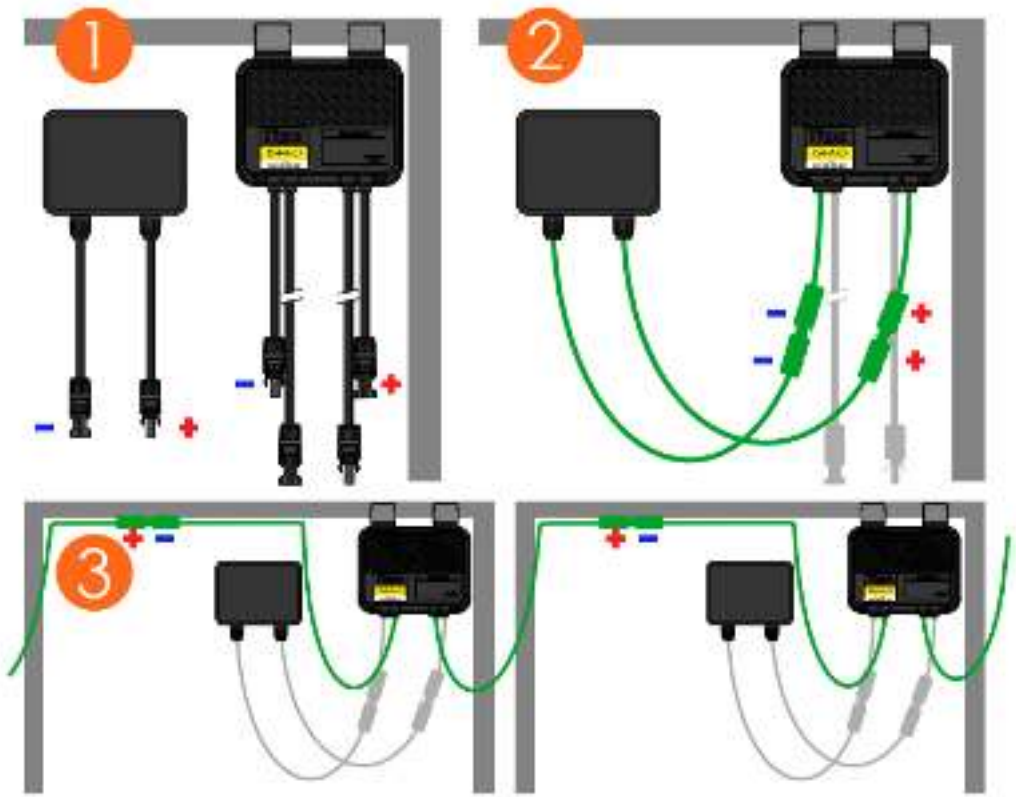
- Tigo: 1 hour 15 min (15 seconds / module)
- Them: 10 hours (2 minutes / module)

**What their installation guides look like**




# What Tigo's installation guide looks like

1. Bracket clips to module frame without tools
2. TS4-A inputs connect to module junction box
3. TS4-A outputs are connected in series to form a string




# Tigo Monitoring

- >1GWh daily PV production is monitored by Tigo
- Tens of thousands of systems installed all over the world
- Monitoring of each component from one central platform
- Monitoring via Smart Web and  Smart App
- Customizable Portal for your business
  - Choose the monitoring level
  - Personal Alerts
  - API

# Tigo Monitoring

- Monitors key indicators at the module level
- Also monitor the inverters, meters, weather stations, and more all in one place
- Pinpoint issues without going on site
- Lower O&M costs from fewer truck rolls
- Highest granularity data in the industry
- Increase bankability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RELIABLE RESULTS

# Even at the bottom of the earth

ANTARCTICA

Tigo's southern-most installation

## Summary

- Use with any PV module
- No grounding needed
- Plug and play out-of-the-box
- Highest reliability
- Low heat dissipation