

# How to sell Tigo Energy Products

## Value Proposition

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### More Energy

- **5-7% more energy** in first year (in unshaded systems)
  - Module binning mismatch
  - Thermal mismatch
  - Soiling
  - Cloud cover
  - With shade → 25%
- Energy improvement increases with age: goes up ~1% per year

### Active System Management

- **Keep uptime high** by pinpointing failures
- **Reduce maintenance costs** with less troubleshooting
- **Eliminate cost** of other monitoring systems
- **Kiosk application** for lobby display in commercial systems

### Enhanced Safety

- **Keep system safe** for emergency crews
- PV-Safe can deactivate the system at the module level

**PAYBACK IS TYPICALLY LESS THAN 2 YEARS!**

## The Right Solution

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### Most Energy

- **Best efficiency** of any module-level solution: 99.5%
- **Highest power:** supports modules up to 350W. Never clips power!

### Most Reliable

- Fewest components: 52 parts
  - Micro-inverters have over 400 parts, including gel-filled capacitors
- **Runs cool:** high efficiency means less heat
- 20-year warranty
- 900-year MTBF at 100C

### Lowest Cost

- Large inverters are more cost-effective. Micro-inverters do not scale
- \$13,000 savings versus micro-inverters on 50kWp system (based on \$0.26/incremental cost of micro-inverter cost at MSRP)

## Competitive Talk Tracks

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### EnPhase

- **Low efficiency**
- **High cost**
- **Put heat on the module:** micro-inverter creates large hot spot on module
- **Low reliability:** part count is very high

### SolarEdge

- **Low efficiency:** Powerbox efficiency is only ~97%
- Powerboxes still create significant heat behind module (due to low efficiency)
- **Unproven,** first-generation inverter

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## References

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- Impedence Matching Technology Description
- Photon Test Results
- Micro-Inverter Comparison (Pending)

## System Includes

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Maximizers (One TIGO is required for each module in the system) Matrix Energy Part # 08-91-002

Gateway wireless communication hub(s) & Maximizer Management Unit(s) (MMU)

- Required only for systems of 15 kW or greater. Not required for Ontario MicroFit systems.
- Extra Gateway, Matrix Energy Part # 08-91-012
- Extra Maximizer Management Unit (Parallel) , Matrix Energy Part # 08-91-010
- Extra Maximizer Management Unit (Series) , Matrix Energy Part # 08-91-011

Five year monitoring Software (one for each system)

- Residential (Less than 50 modules), Matrix Energy Part # 08-91-016
- Commercial (More than 50 Modules), Matrix Energy Part # 08-91-017

Optional Equipment

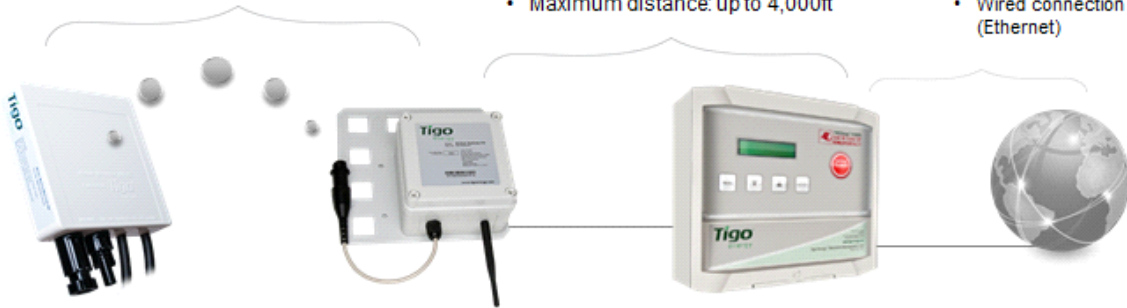
- Extra Gateway (For systems of 15 kW or greater), Matrix Energy Part # 08-91-012
- Revenue Grade Meter, Matrix Energy Part # 08-91-015
- Light Sensor, Matrix Energy Part # 08-91-014
- Temperature Sensor, Matrix Energy Part # 08-91-013

# How to sell Tigo Energy Products

- Wireless connection (802.11)
- Maximum distance: 30ft line-of-sight

- Wired connection (RS-485 cable)
- Maximum distance: up to 4,000ft

- Wired connection (Ethernet)



## Module Maximizer

- Mounting: behind each module
- Quantity: one per module (typically)

## Gateway

- Mounting: in the array, at the center of a block of Maximizers
- Quantity: one per 60 modules

## Maximizer Management Unit

- Mounting: near the inverter
- Quantity: one per six Gateways maximum (so one per 360 Maximizers)