

**SolarEdge**

Distributed Solar  
Power Harvesting  
Systems

2012

**solar**edge  
*architects of energy™*

# SolarEdge Vision

- To be the leading provider of module-level electronics for the PV industry
- To accelerate the pace toward grid parity and make clean energy affordable and widespread



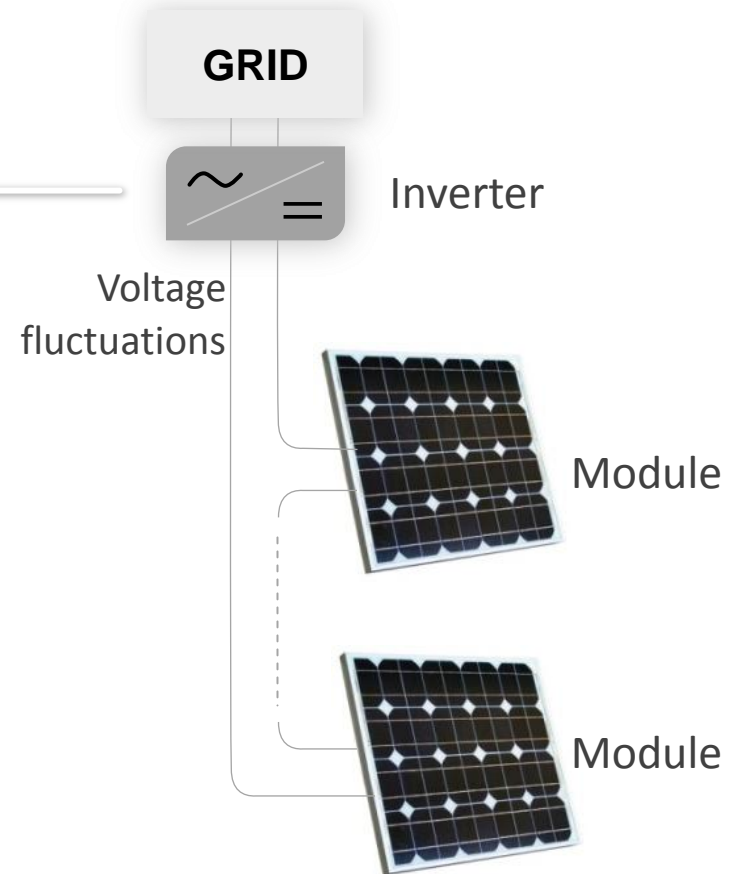


# The Problem

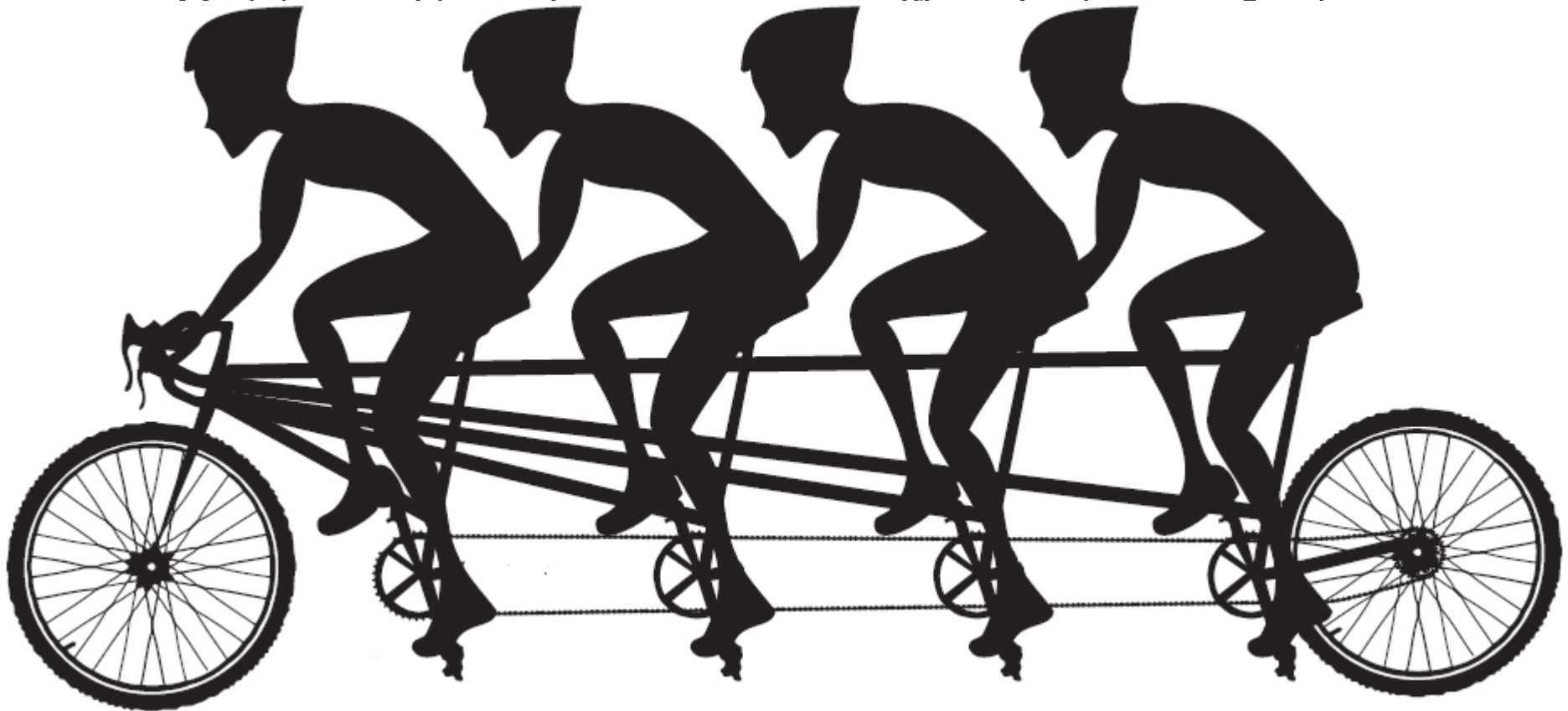
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# Traditional PV Systems

- Centralized Inverter
  - DC/AC
  - **MPPT**
  - No voltage shutdown
  - No module monitoring



# Traditional Inverters: Module Mismatch Impact on Power Loss



The speed is limited by the performance of the weakest rider...

# Mismatch and Loss Sources

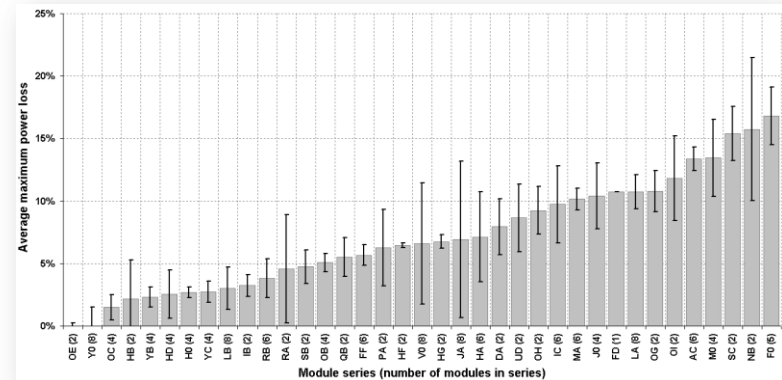
Module mismatch challenges PV plant planners, installers & owners

- Manufacturing tolerance
- Temperature mismatch
- Soiling mismatch
- Undetected transport damage
- Uneven module aging rate
- Partial shading – inter-row, and cloud fronts

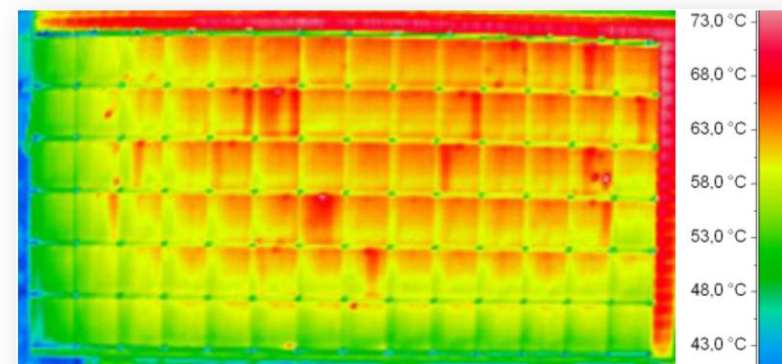


## Uneven module ageing

Black lines: Power variance of identical modules after 20 years



## Temperature mismatch



# Inherent Problems in Traditional Systems

## Energy Loss



- Module mismatch (3-5% loss)
  - Partial shading (2-25% loss)
  - Undervoltage/overvoltage (0-15%)
  - Dynamic MPPT loss (3-10% loss)
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- **SolarEdge solution overcomes all energy losses providing up to 25% more energy**
  - **SolarEdge solves other system drawbacks at a price comparable to traditional inverters**

## System Drawbacks

- No module level monitoring
- Limited roof utilization
- Safety hazards





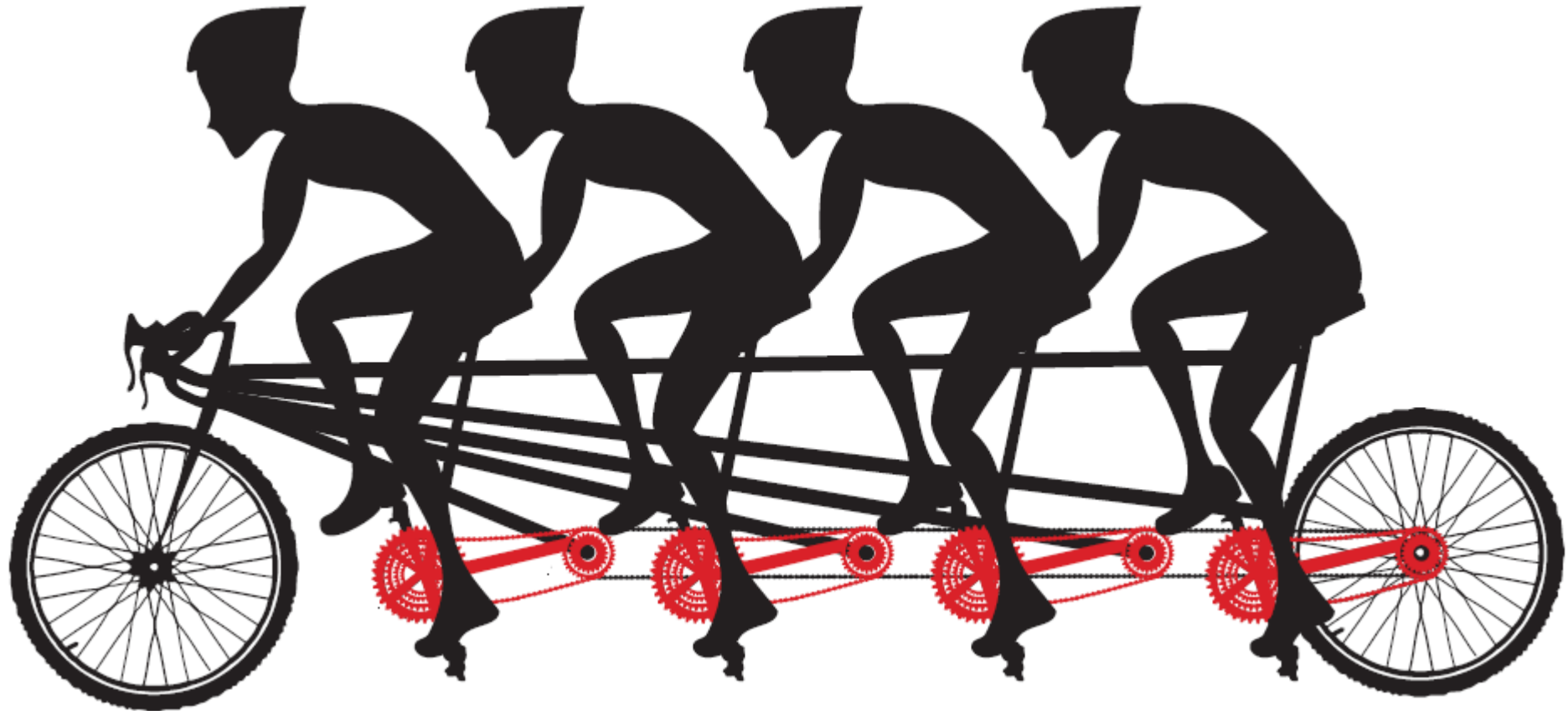
# Solution Overview & Benefits

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# Module Level Optimization: Module MPPT Prevents Mismatch Loss

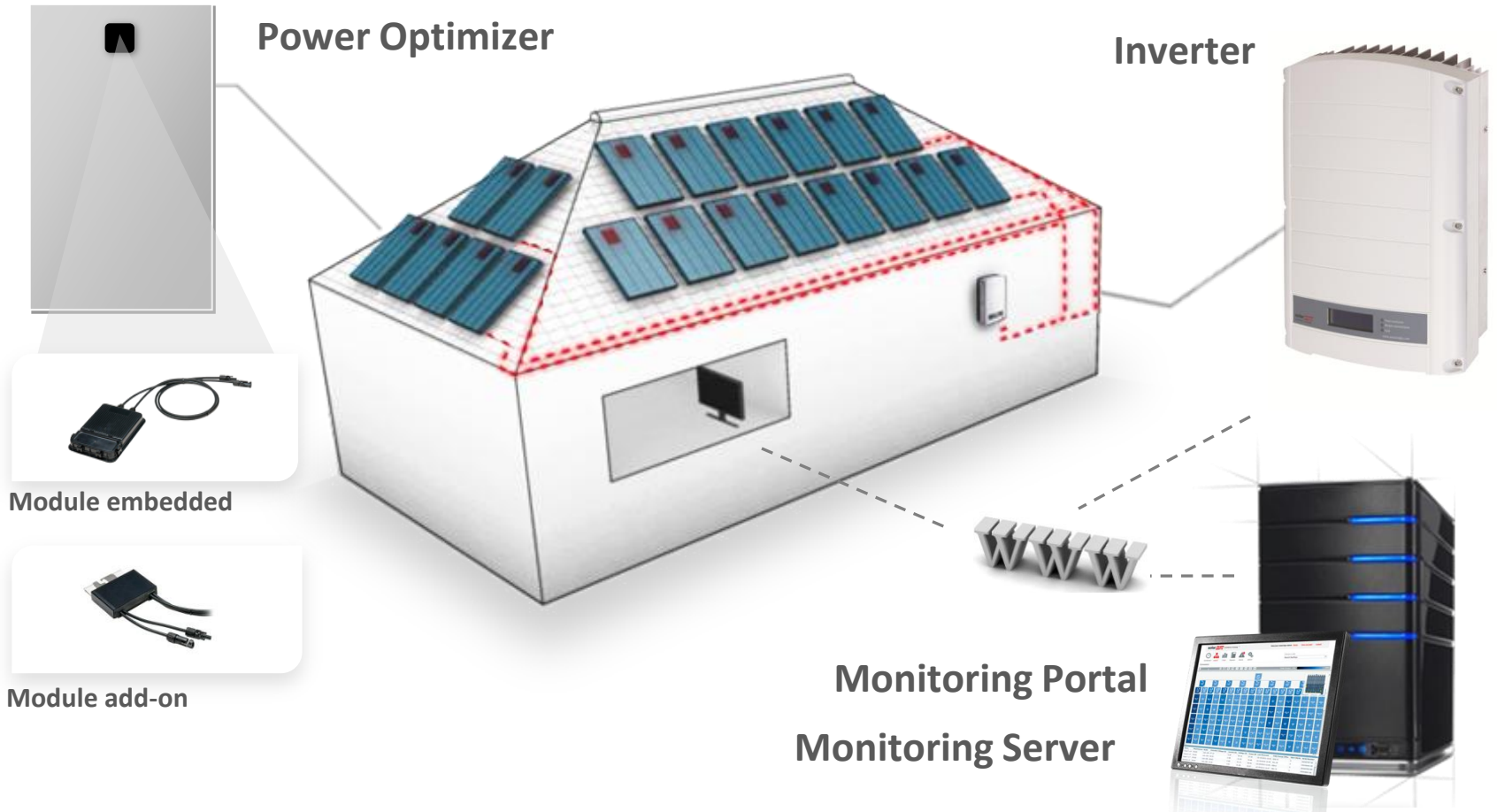
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With personal transmission gear, each rider can maximize his own potential, so the bicycle rides faster!

# SolarEdge System Overview

- Module level optimization
- Fixed voltage – flexible design
- Module level monitoring
- Enhanced safety solution



# SolarEdge Products

## Optimizers

- Advance semiconductor (ASIC) based
- Per-module Maximum Power Point Tracking (MPPT)
- **99.5%** maximum efficiency
- Advanced, real-time performance measurement
- Automatic module shut-down for installer and firefighter safety



## Special Inverters

- Inverters specifically designed for power optimize
- 98% maximum efficiency
- Simpler design → Highest reliability



# Module-Level Monitoring

- **Automatic, accurate fault detection**

- Faults located on site map
- No additional wiring
- Web portal and mobile applications



- **The result:**

- Remote diagnostics
- Operations and maintenance cost reduction
- Increased system availability and production
- Proactive customer service



# Benefit Summary

**The only commercially available solution to deliver all following benefits, while reducing the cost of energy**



Maximum energy gain

Ground mounted system: 2-5%, commercial 2-10%, residential 2-25%



Constraint-free site design

Optimal site space utilization at reduced cost



Real-time module-level web monitoring

Increased uptime and remote diagnostics



Automatic module shut-down

Unique electrocution prevention and fire safety

# SolarEdge at a Glance

Established the DC power optimizer segment and leads it with a market share of over 70%

Over 1,600,000 power optimizers shipped to over 30 countries

More than 60,000 inverters shipped

Quarterly run rate of 100MW

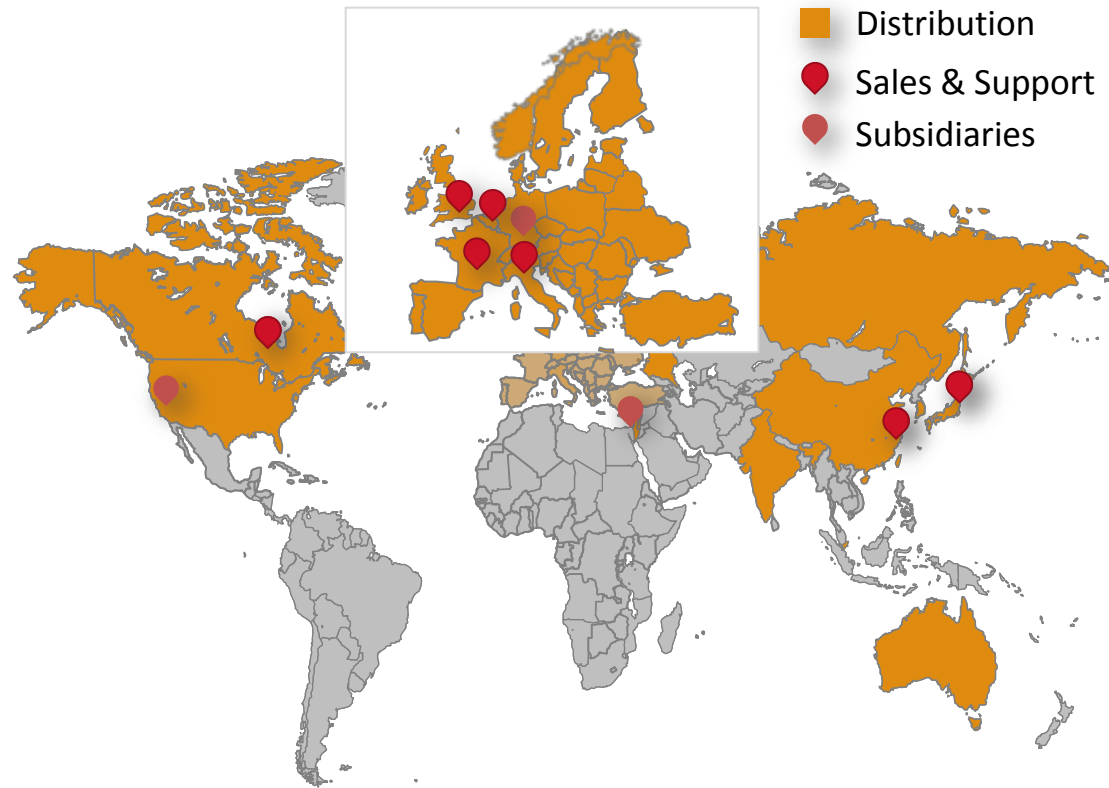
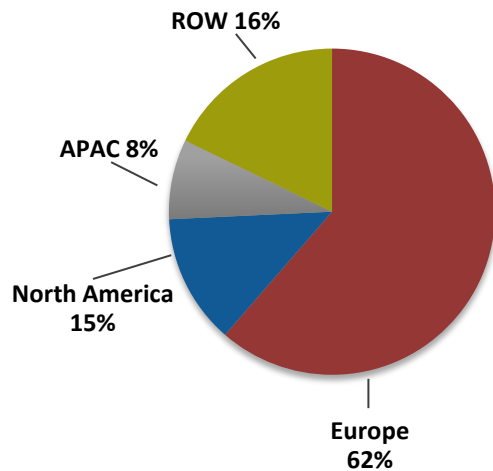
Utility, commercial and residential solutions

Strategic partnerships across the PV value-chain from module manufacturers to integrators

# Global Sales & Distribution

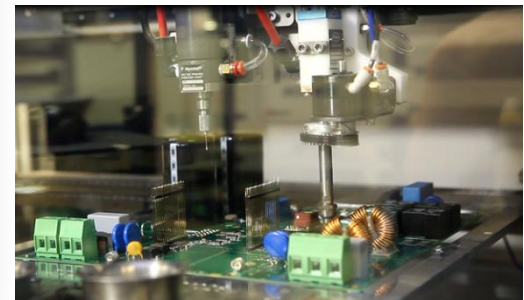
## Sales through leading integrators and distributors in over 30 countries

2011 worldwide distribution of sales



# High Quality Global Production

- To date over 1.6 million units shipped
- Automated production lines
  - Close partnership with leading manufacturers Jabil & Flextronics
  - Scalability to support 3 times year over year production volume increase







# Thank you

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