

Who Is National Semiconductor?

- **50 Years of Building**
 - Great Customer Relationships
 - Innovative Products
 - Shareholder Value



- **World-class Analog IC and Power Engineering, aggressively expanding**
 - Renewable Energy
 - Energy Efficiency
 - Battery Charging
 - LED Lighting
 - Smart Grid

The Innovation

- Intersolar
- EE Times
- EDN
- Wall Street Journal
- InterPV
- Energy Daily Elektra
- Prism Awards
- Climate Change Business Journal
- Golden Mousetrap

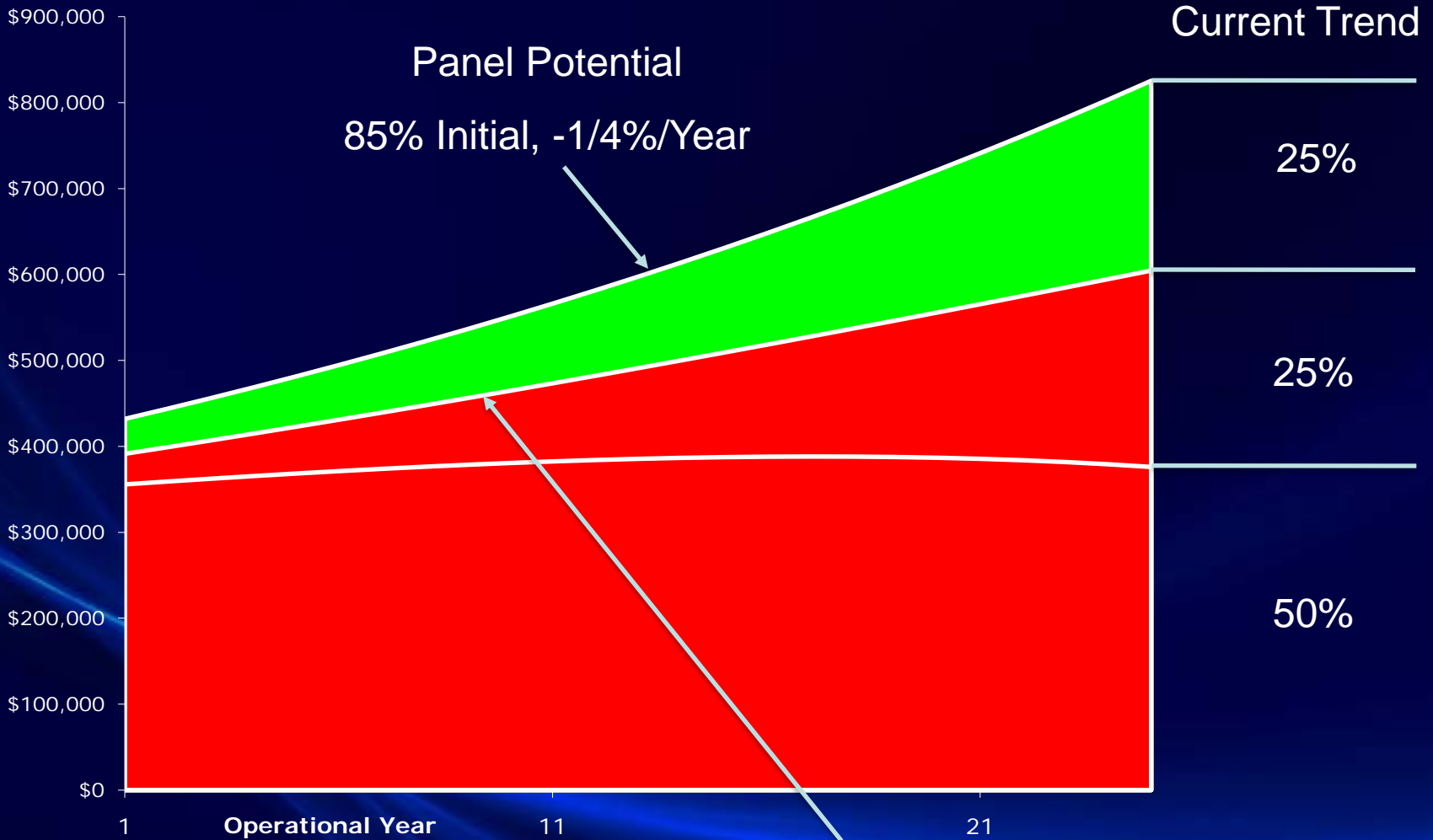


The Customers

- Over 600 Customers
- More than 100MW



The Market Need



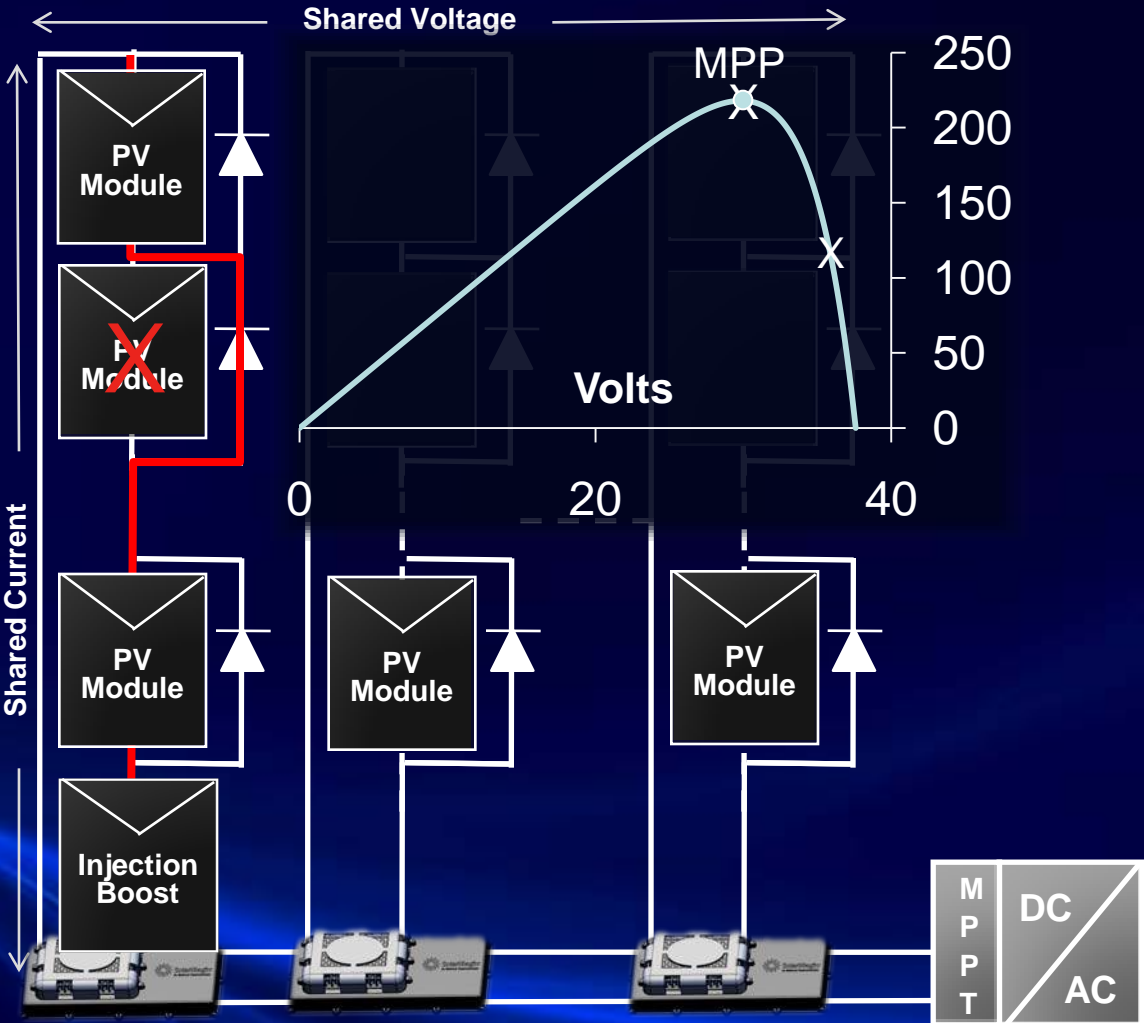
Why PV Systems Under-perform

- **Small mismatches**
 - Have Large Penalty
- **Monitoring alerts poor performance**
 - Doesn't correct or diagnose

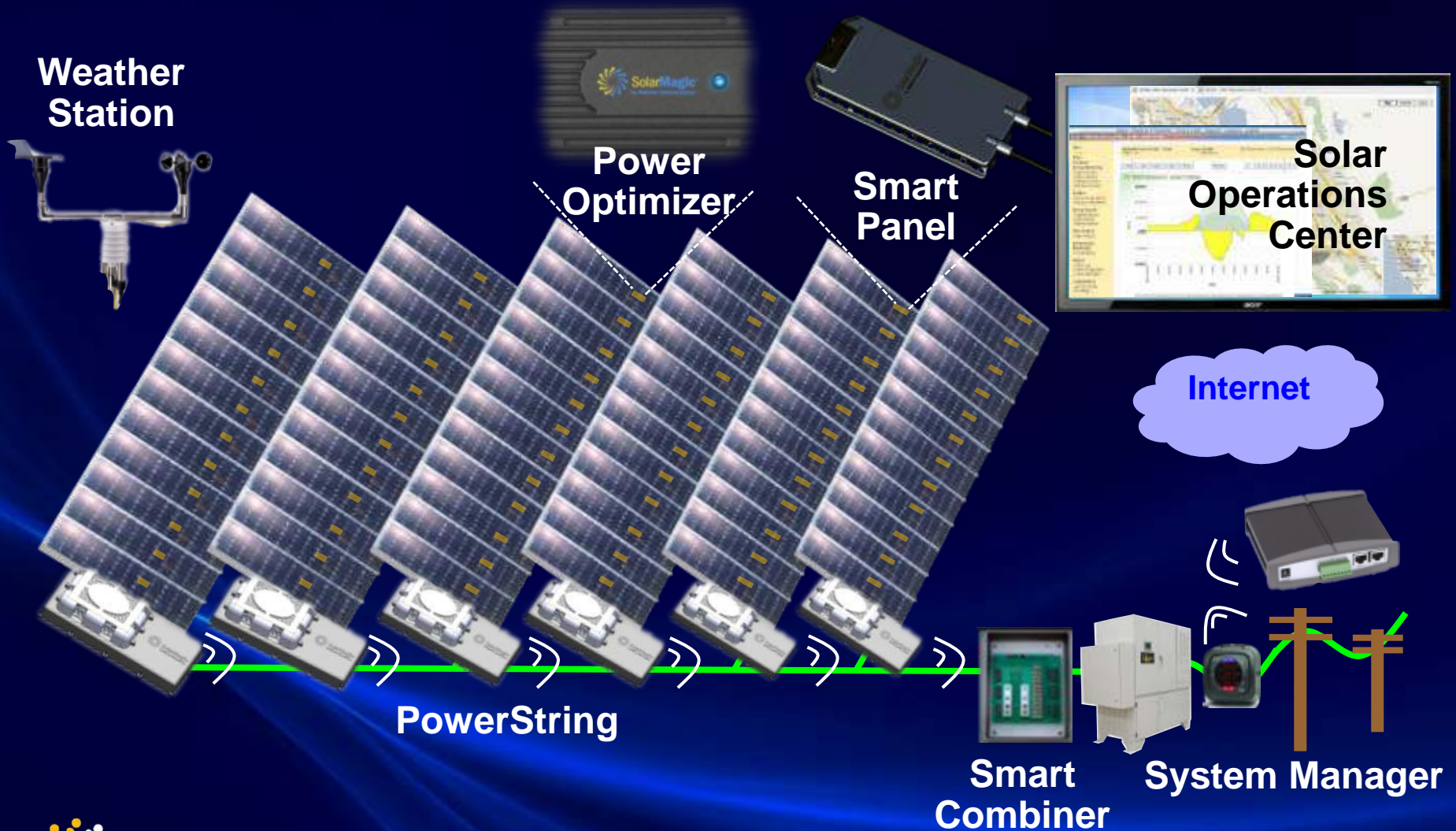
- **Panel variation**
- **Orientation**
- **Inter Row shading**
- **Degradation**
 - Corrosion, Cabling, Connectors
 - Cells
- **Ground faults**

- **Soil, debris**
- **Reflection**
- **Shade**
- **Cloud shadows**

Maximizing Performance



Active Power Management Umbrella



Commercial Rooftop Installation Case Study – 22.6% Gain

- 30kW array
- 17 strings of 12 panels
- Limited shading
- 22.6% production gain
- Performance Ratio: 67% ⇒ 82%



“For over four years, our Oak Street installation has been helping residents pay less for electricity, and the addition of SolarMagic has dramatically boosted system performance,” said Jigar Shah, founder of SunEdison “SolarMagic is helping us get 22.6 percent more power out of the same panels, making the system even more productive and cost effective.”

Jigar Shah, Solar Visionary