



Optimizing Your Commercial Business

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29 April 2020

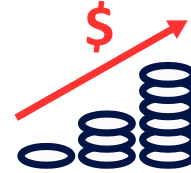
Why Optimise?



Strong Company

SolarEdge is a financially strong and bankable company

- Profitable
- Publicly traded on the NASDAQ
- Substantial track-record in commercial PV



Better Bottom Line

The lifetime benefits of the SolarEdge solution offset the slightly higher inverter cost

- Reduced BoS costs
- Reduced O&M costs
- Increased energy production



Improved Asset Management

System owners enjoy enhanced lifetime system performance

- Higher system uptime
- Risk mitigation and long-term investment protection
- Superior safety



Complete Service Suite

EPCs and installers enjoy enhanced support from SolarEdge's local service team

- Pre-sale and post-sale support
- Installation & commissioning support
- Advanced O&M tools and capabilities

SolarEdge in Numbers

49.9M
Power Optimizers
Shipped 

#1
Solar
Inverter
Company 

348 Awarded
Patents and **266**
Additional Patent
Applications

28
Countries
Presence

> 1.38M
Monitored systems
around the world

\$418.2M
Q4 2019 revenue

2,431
employees



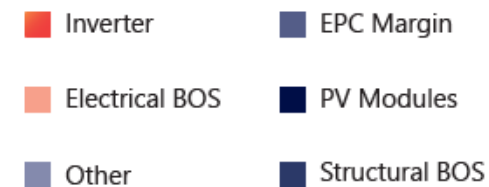
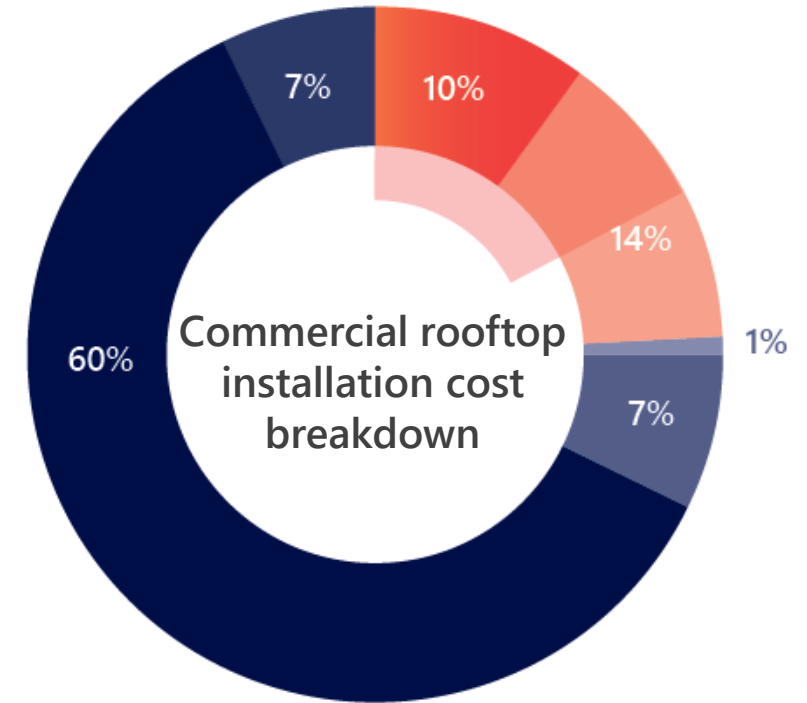
2.1M
Inverters
Shipped 

16.2GW
of our systems
shipped worldwide

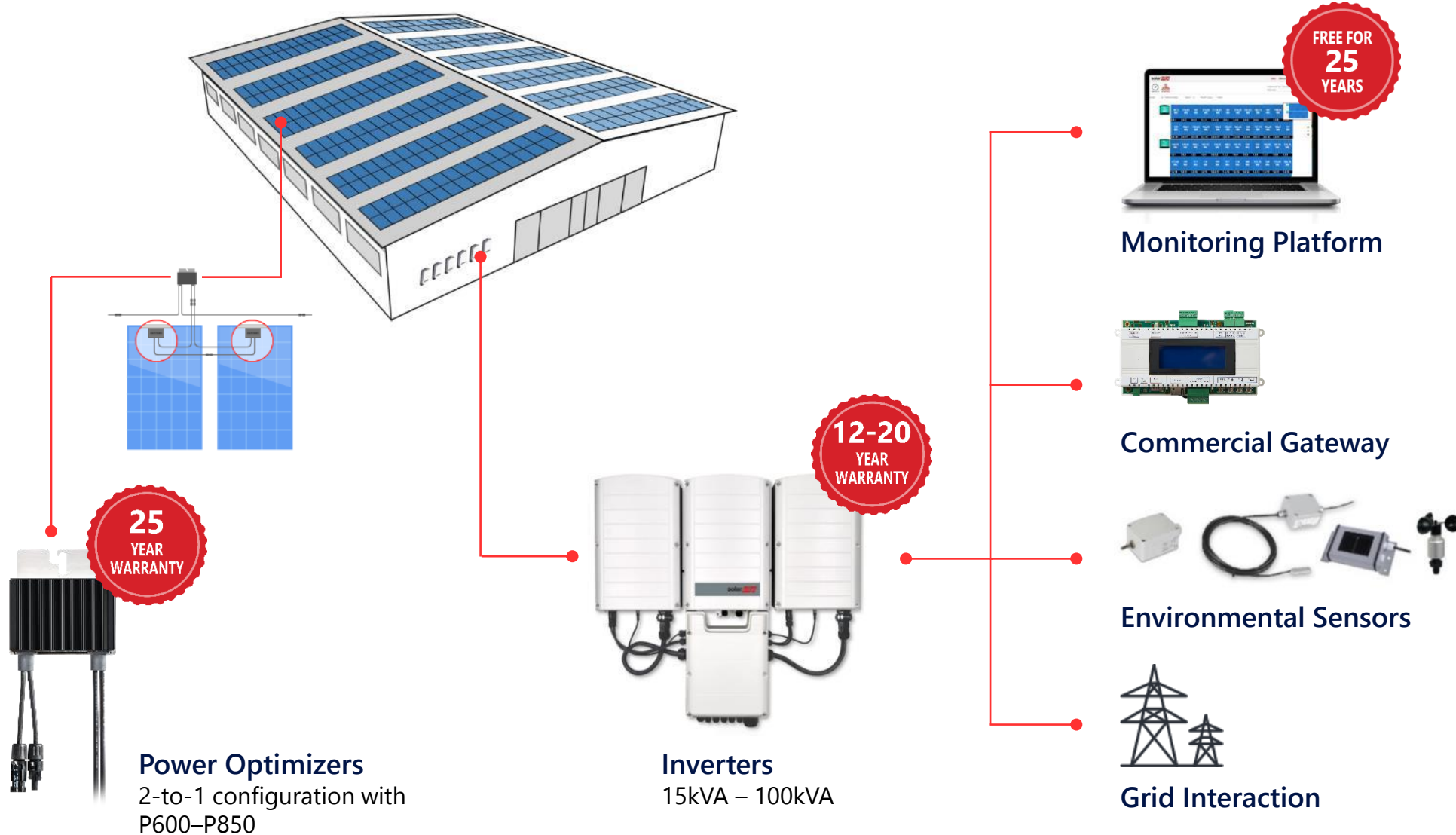
Inverter's Significance

- ▮ Inverters account for <10% of the system cost but,
 - ▮ Influence up to 20% of system cost
 - ▮ Manage 100% of system production
 - ▮ Are the “brains” of the system
 - ▮ Mitigate O&M expenses through PV asset management solutions

Inverter selection is critical for the long term financial performance of a PV system

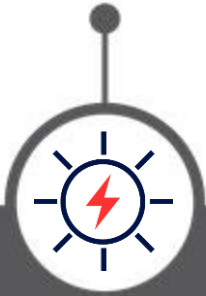


The SolarEdge Commercial Solution



SolarEdge Offers Four Key Benefits

More Energy



Increased energy yield & faster return on investment through module-level MPPT

Lower O&M Costs



Full visibility of system performance & remote troubleshooting

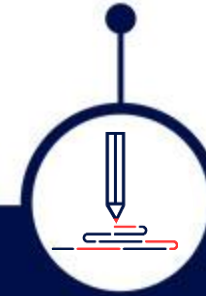
Enhanced Safety



Safety during installation, maintenance, firefighting, & other emergencies



Flexible Design



Maximum space utilization with minimum design time

BoS Cost Saving

Up to 60
modules
per string

Fewer strings

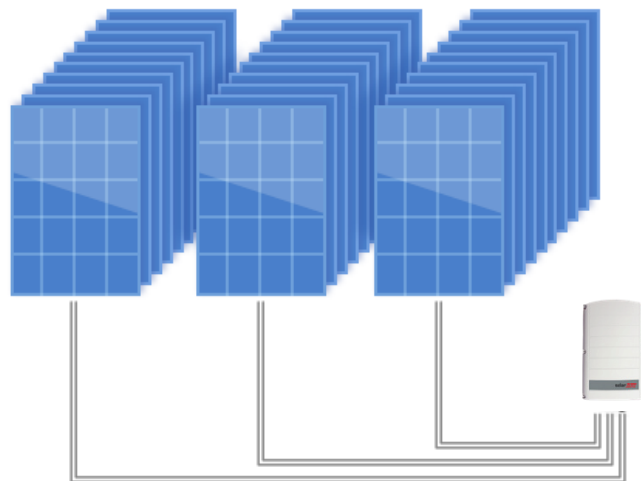
Less wiring, combiner
boxes, fuses, etc.

Less onsite self-crimping
at string end

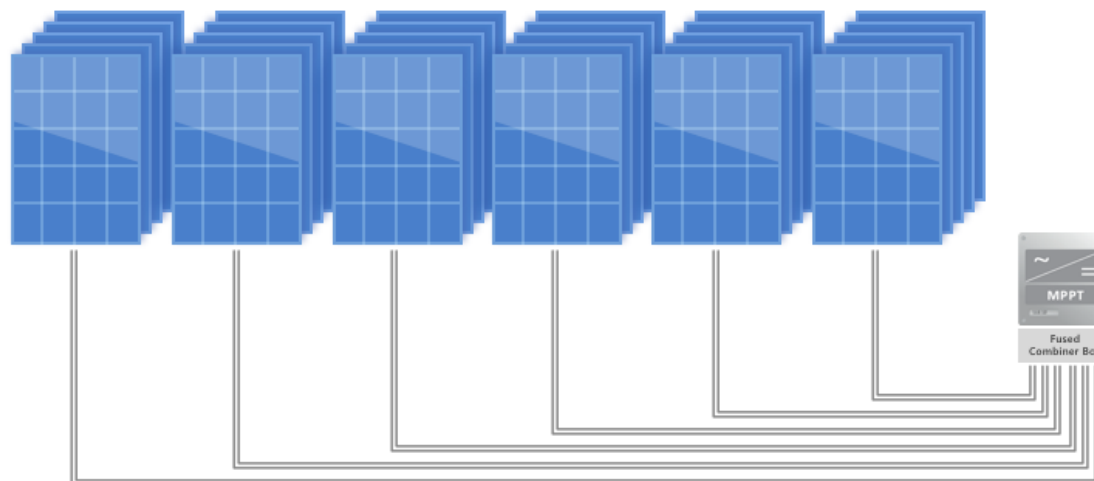
Up to 50% reduction
in BoS cost

Reduced risk
of failure & fire

SolarEdge DC Optimized Inverter



Traditional Inverter

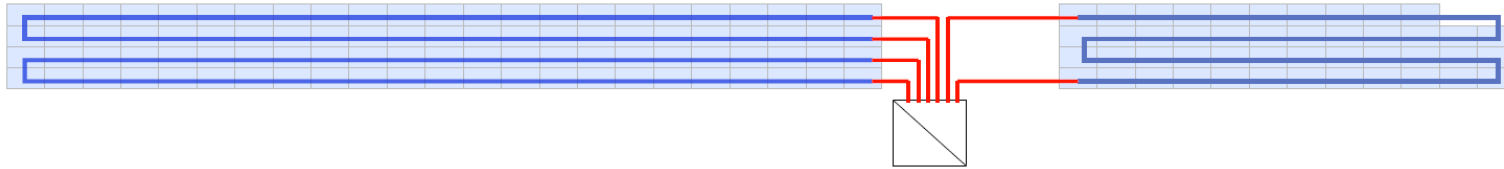


BoS Cost Saving

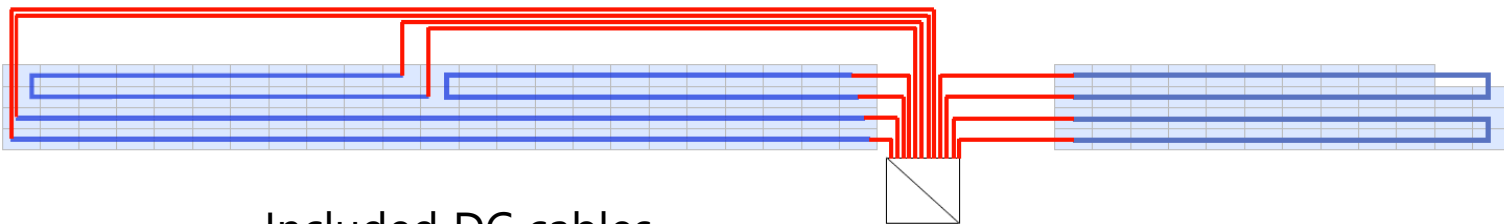
- SolarEdge system: 0.45 m/kW DC
- Traditional 27.6kW string inverter: 4 m/kW DC

In MW-scale systems, the savings can amount to thousands of dollars

SolarEdge: 3 strings per inverter, 44/46 modules per string



Traditional string inverter: 6 strings per inverter, 22/23 modules per string



- 8
- Included DC cables
 - Additional DC cables

Lifetime Revenue

Power optimizers enable installation of:

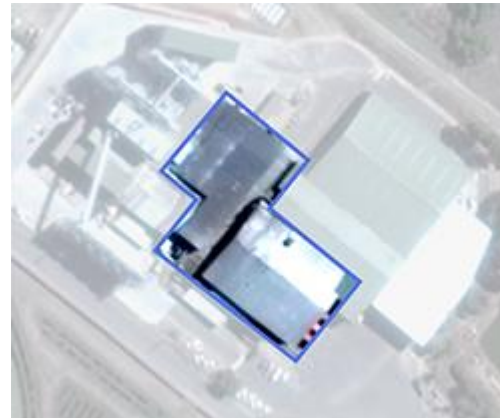
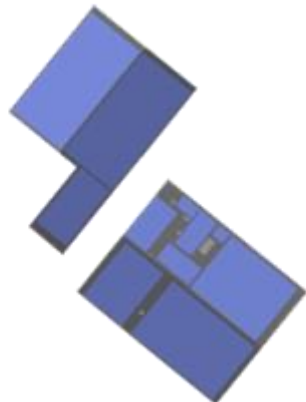
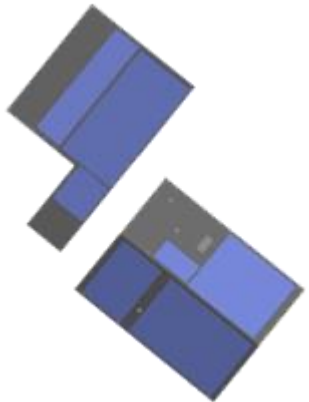
- ▀ Modules in partially shaded areas
- ▀ Strings of uneven lengths
- ▀ Strings in multiple orientations and different roof facets

Flexible site design > More modules on the roof > **More power**

Traditional Inverter:
312 kWp

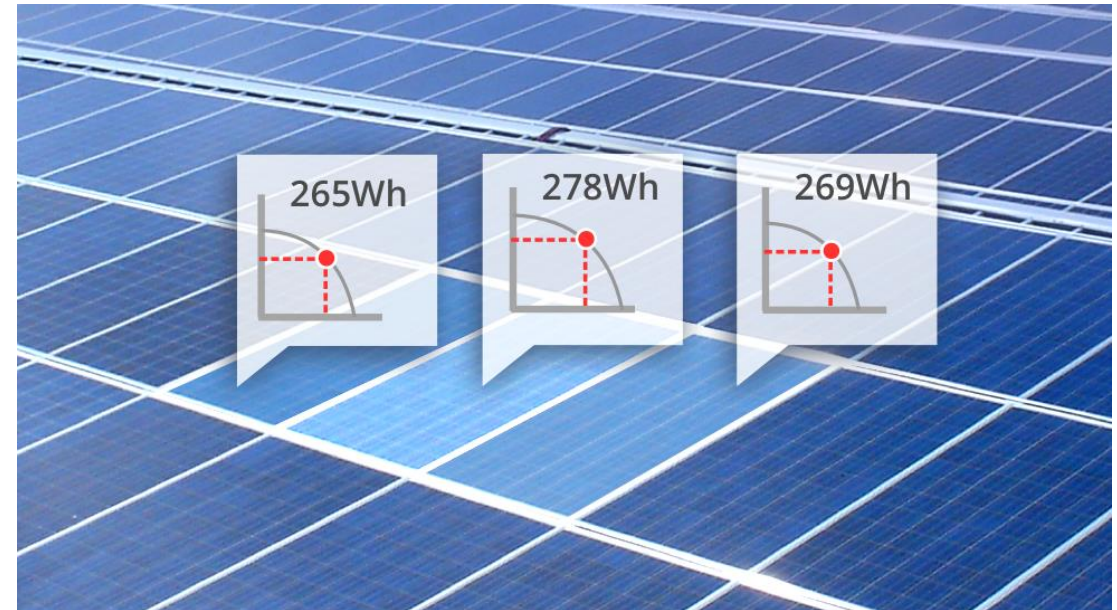
SolarEdge System:
396 kWp

= 27% added power



Lifetime Revenue

- MPPT per module:
 - SolarEdge is designed for higher energy yield
 - Each module produces maximum power independently of other modules in the string
 - Underperforming modules do not affect the production of the whole string

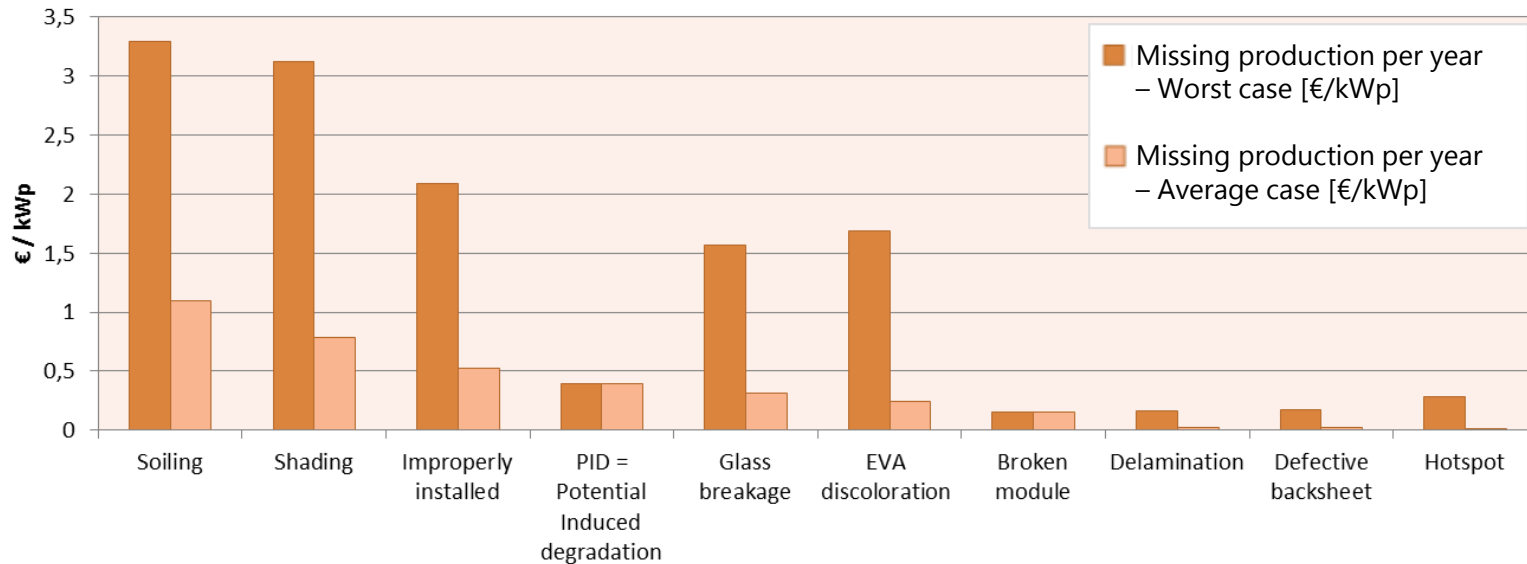


Approximately 3% higher energy yield *

* SolarEdge estimates that on many commercial sites, power optimizers can recover approximately 3% more energy in year one. As modules age, this mismatch continues to increase leading to an additional 2% potential recovery for systems optimized by SolarEdge.

Module Mismatch => Power Losses

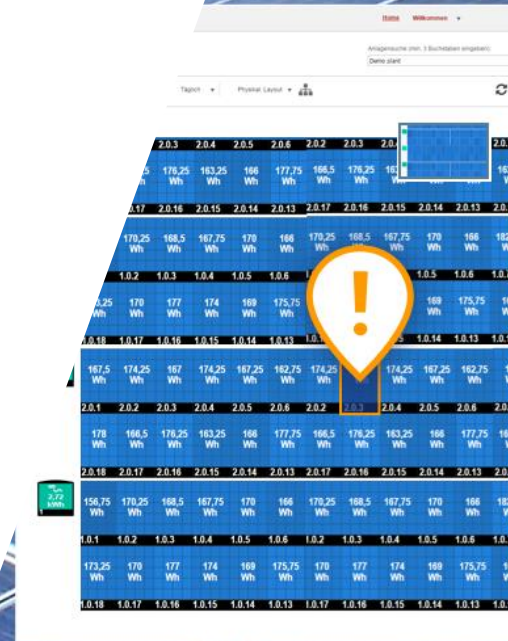
- A EURAC/TÜV RH report on Technical Risks in PV Projects demonstrates that the economic impact of soiling and shading can be higher than 3€/kWp/year due to missing production



- The SolarEdge solution minimizes power losses by:
 - Optimizing power production per panel
 - Alerting and pinpointing underperforming panels

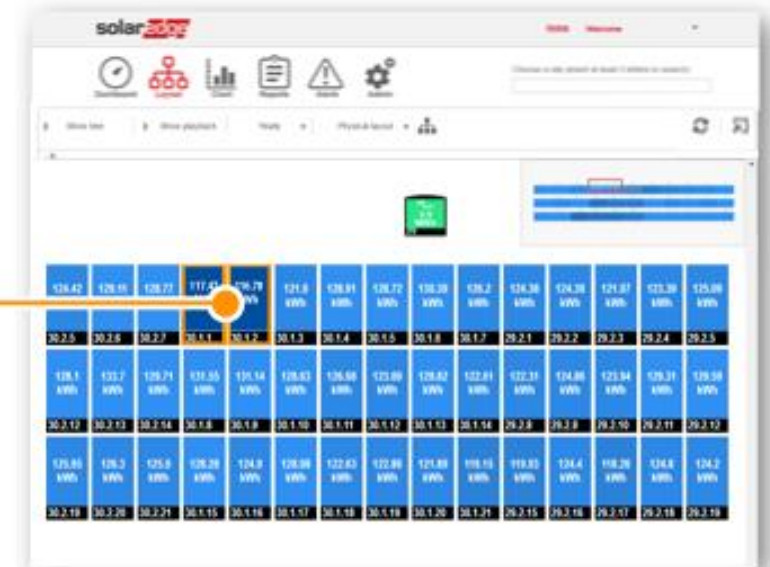
Asset Management

- Protect your asset with full visibility into system performance & remote troubleshooting for reduced O&M costs
 - Monitoring at the module level – free for lifetime
 - Fault detection pinpointed on a virtual site map
 - Automatic alerts on system issues



Reduced O&M Cost

- Alerts for modules & inverters underperformance
- Know before you go:
 - Identify underperformance
 - Use charts to analyze underperformance
 - Schedule maintenance according to problem severity and effect on system performance
 - Fewer trips to site, less time spent on-site



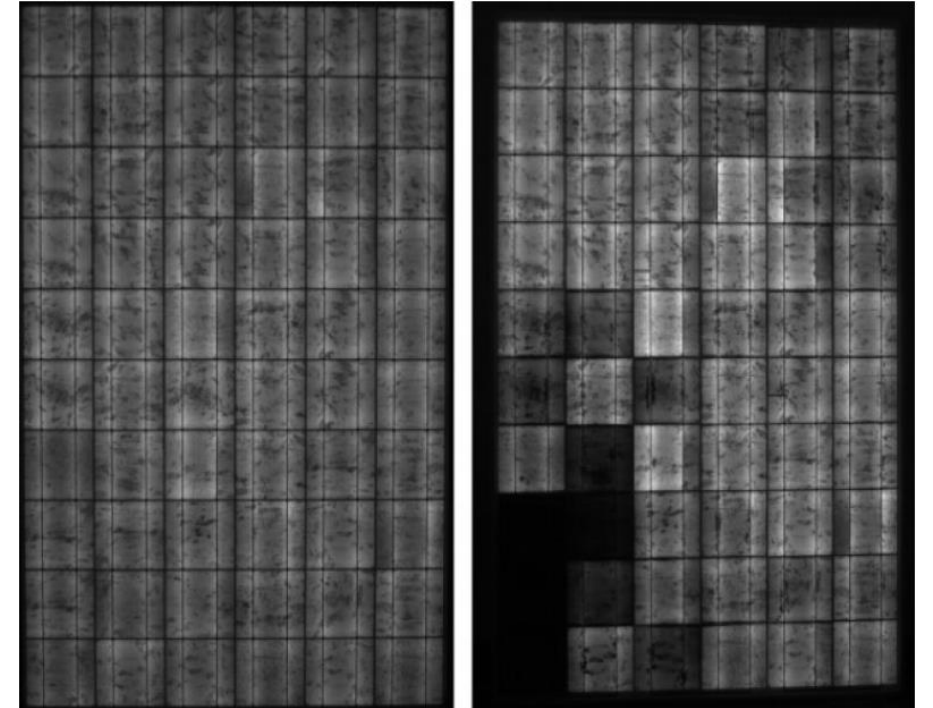
Increased System Availability

- Bypass diode seems to have short circuited – faulty module shows 2/3 of the voltage
- Issue pinpointed to module level
- Installer can proactively provide service at his convenience
- Quick and easy resolution will generate more energy for the owner for system lifetime



Example: PID Detection

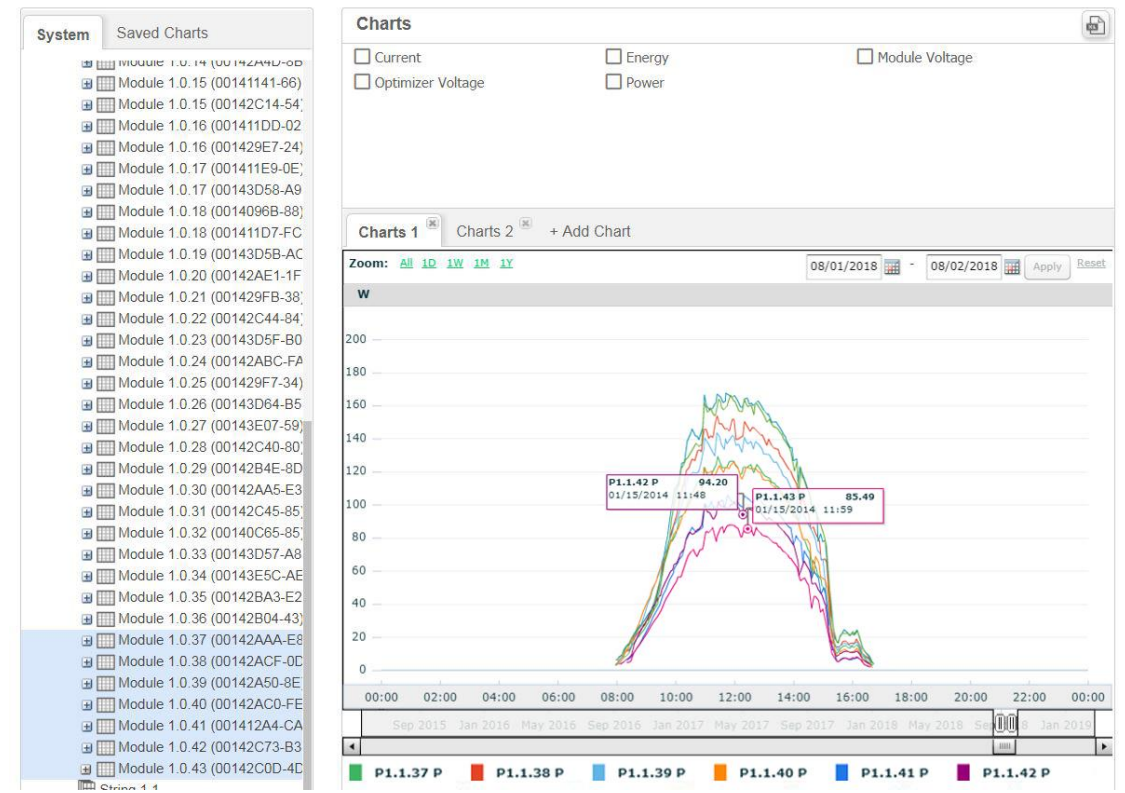
- Potential induced degradation is a physical phenomena in high voltage PV systems, that significantly reduces module power and system production
- Occurs if modules have a negative potential to earth while in operation, and is strongest on modules closest to the inverter's negative pole
- If PID is suspected, technicians are required to climb on the roof, disconnect the modules, and measure their output voltage



Electroluminescence images of a module before (left) and after (right) PID testing. Source: PVTech Photo: © Fraunhofer CSE

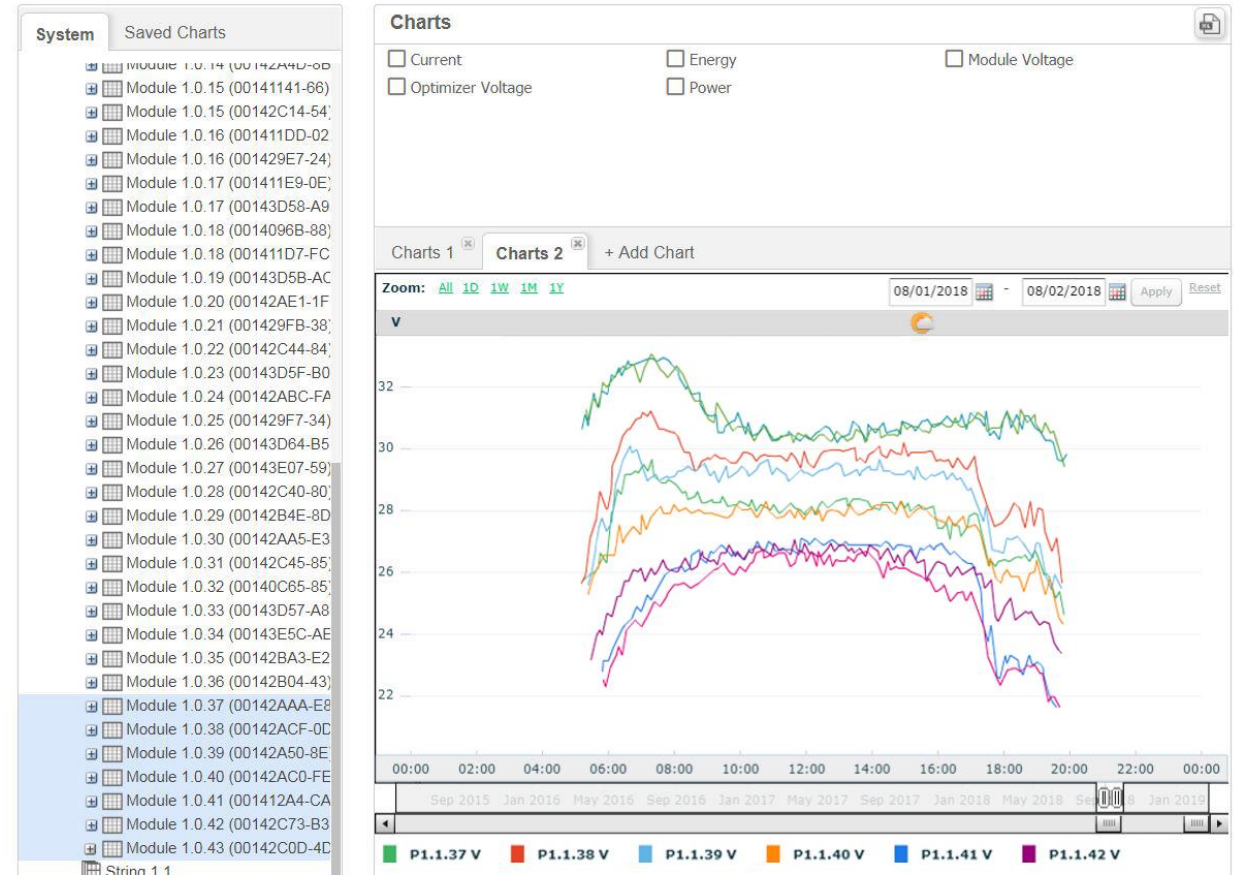
Remote PID Detection

- Using the SolarEdge monitoring platform, PID problems can be detected in “two clicks”
- Looking at the string modules power, degradation of power in the last modules is shown (closest to the negative pole)



Remote PID Detection (Cont.)

■ No need to send technicians to the roof – modules voltage is measured remotely



Protect Your Investment

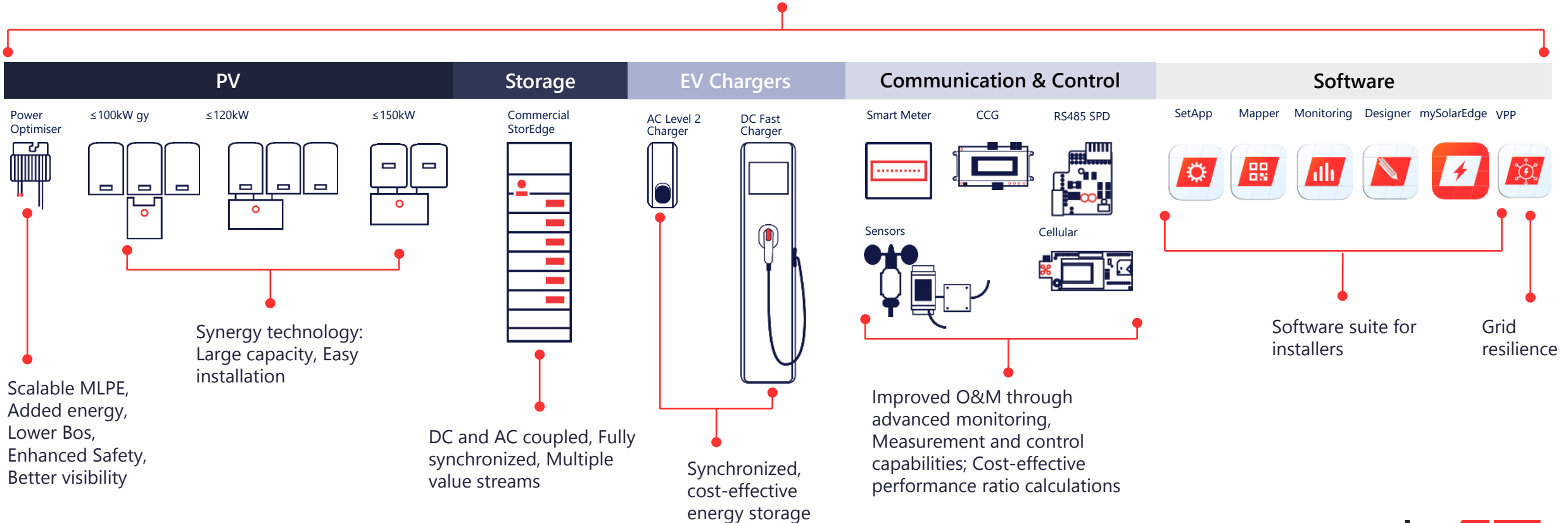
Future Compatibility

Be prepared for future costs than can affect your balance sheet:

- ▀ Lower-cost inverter replacement after warranty
 - ▀ ~40% less than traditional inverters
- ▀ Module replacements – with SolarEdge there is no need to keep module stocks. Any module available in the market would fit
- ▀ Expansion – new power optimizers and modules can be utilized in the same string with older models
- ▀ Products are certified as resistant to ammonia corrosion in agricultural areas



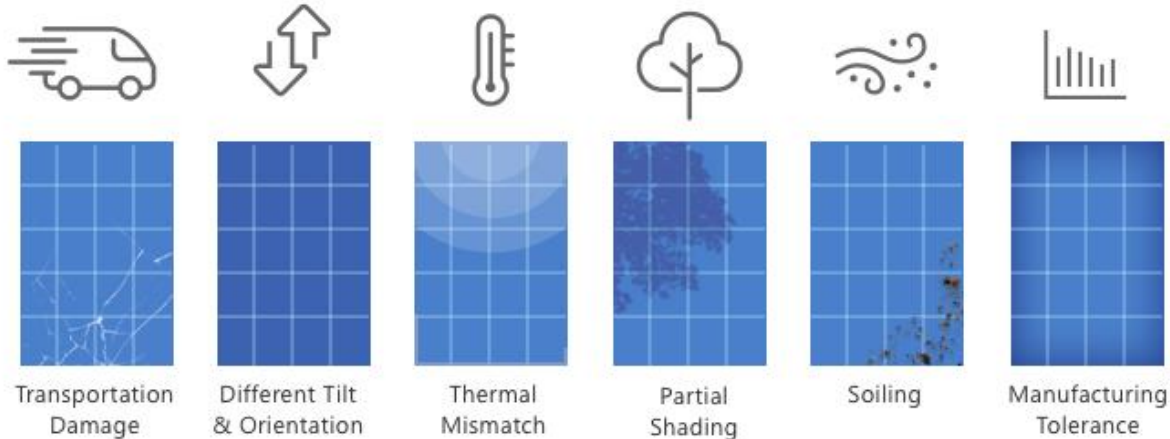
Future Proofing



Expect the Unexpected

Future proof

- Mitigate mismatch and aging losses
- Protect against unpredictable environmental and obstruction changes (e.g. antenna erected, growing trees, etc.)



- Defective modules can be replaced with any module available in the market

Higher system uptime

- The monitoring and alerts enable real-time detection and fast response

Safe Installation and Maintenance

- Remote monitoring instead of diagnostics work at dangerous heights
- SafeDC™ – no high VDC during installation or maintenance
 - Power optimizers and DC cables automatically shut down when inverter is off or disconnected
- SolarEdge inverters comply with UL1699B arc detection standard designed to mitigate effects of some arc faults that may pose a risk of fire

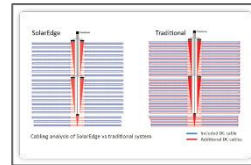


Comprehensive Service Suite

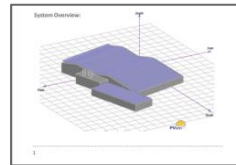
- SolarEdge supports you throughout your PV project life cycle
- We provide the tools and services to help you grow your business with us



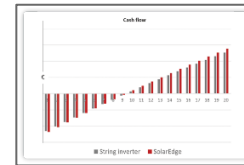
Project Design & Pre-Sale



Design optimization



Comparative PV Simulation



LCOE & ROI analysis



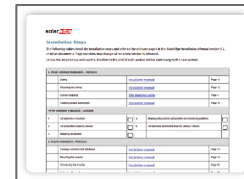
Project Execution



Design validation



Hands-on Training



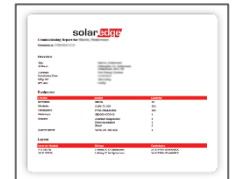
Installation checklist



Onsite support



Remote operations



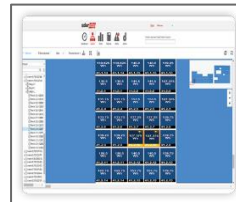
Automatic commissioning report



Operation & Maintenance



Fleet management



Pinpointed alerts



Performance monitoring



Module-level analysis



Remote troubleshooting

Automatic reporting. A screenshot of a report showing a table of data, likely related to energy production or system performance.

Module ID	Module Number	Watt
Module 1	1014271810-78	300W
Module 2	1014271810-48	315W
Module 3	1014271810-43	315W
Module 4	1014271810-48	300W
Module 5	1014271810-81	300W
Module 6	1014271810-34	315W
Module 7	1014271810-14	315W
Module 8	1014271810-12	315W
Module 9	1014271810-48	315W

Automatic reporting

Thank You!

Cautionary Note Regarding Market Data & Industry Forecasts

This power point presentation contains market data and industry forecasts from certain third-party sources. This information is based on industry surveys and the preparer's expertise in the industry and there can be no assurance that any such market data is accurate or that any such industry forecasts will be achieved. Although we have not independently verified the accuracy of such market data and industry forecasts, we believe that the market data is reliable and that the industry forecasts are reasonable.

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Revision: 03/2020/EN ROW

solar**edge**